KNUST Microbiology, Immunology and Molecular Biology

Learning objectives for the course or programme:
not specified
Suggested topics or keywords related to this topic:
not specified
Web address (URL) or attachment containing further information, such as a course syllabus or curriculum outline:
http://knust.edu.gh/pages/sections.php?siteid=pharmacy&mid=607&sid=1824 (http://knust.edu.gh/pages/sections.php?siteid=pharmacy&mid=607&sid=1824)
Intended Learner Audience:
Undergraduate
Types of Materials:
Case Studies
Lab Exercises
Lecture Presentations
Data Sets
Software Application
If other, please provide details below
Other Types of Materials:
Faculty Development Materials
Additional comments that would aid our search:
Email request from Dr. Christian Agyare from Department of Pharmaceutics at Kwame Nkrumah University of Science and Technology
Status:
Approved

Name: Kathleen
Institution:
University of Michigan
Country:
United States

Comments

admin replied on Thu, 2013-07-11 17:51 PERMALINK (/COMMENT/16#COMMENT-16)

SEARCH RESULTS (/COMMENT/16#COMMENT-16)

Results for Microbiology

My colleague from University of Michigan and I searched for ""microbiology" from the following websites: African Health OER Network, http://www.oercommons.org (http://www.oercommons.org), http://open.umich.edu (http://open.umich.edu), http://www.mededportal.org (http://www.mededportal.org), http://ocw.tufts.edu (http://ocw.tufts.edu), and http://ocw.jhsph.edu (http://ocw.jhsph.edu). Here's what we found for microbiology:

Microbiology - Course
http://ocw.tufts.edu/Course/2 (http://ocw.tufts.edu/Course/2)
Authors: multiple
Source: Tufts University
License: Creative Commons Attribution-Noncommercial-Share Alike 3.0 Unported License.
Description: The intent of this course is to introduce students to basic tactics used by microbial pathogens to establish infectious diseases.

As such, students should understand that most of the principles detailed in the course will be encountered several times during the next year of studies, particularly in the Infectious Diseases unit. The topics covered in this course deal selectively with important pathogens because Medical Microbiology will not be the only exposure of the student to infectious agents. As examples, HIV is only covered in two lectures, but you will have other opportunities to review the basics of disease caused by this virus.

Biology of Water and Health - Course

http://ocw.tufts.edu/Course/55 (http://ocw.tufts.edu/Course/55)

Authors: multiple

Source: Tufts University

License: Creative Commons Attribution-Noncommercial-Share Alike 3.0 Unported License.

Description: This interdepartmental course explores the multi-faceted ways in which water and human health are related. This includes the influence of waterborne pathogens on human and environmental health, as well as by identifying the central role of water in preserving health through adequate sanitation and hygiene. Above and beyond this classic lens for examining water and health, the course explores social, economic, and behavioral dimensions in a global context. The course allows participants to become familiar with different disciplinary approaches for addressing the biological linkages between water and health.

Public Health Biology - Course

http://ocw.jhsph.edu/courses/PublicHealthBiology/ (http://ocw.jhsph.edu/courses/PublicHealthBiology/)

Authors: multiple

Source: Johns Hopkins

License: Creative Commons Attribution-Noncommercial-Share Alike 2.0 Unported License.

Description: Offers an integrative molecular and biological perspective on public health problems. Explores population biology and ecological principles underlying public health and reviews molecular biology in relation to public health biology. Modules focus on specific diseases of viral, bacterial, and environmental origin. Uses specific examples of each type to develop the general principles that govern interactions among susceptible organisms and etiologic agents. Devotes special attention to factors that act in reproduction and development. Places emphasis on common elements encountered in these modules. These may include origin and dissemination of drug resistance, organization and transmission of virulence determinants, modulation of immune responses, disruption of signal transduction pathways, and perturbation of gene expression. Also considers the role of the genetic constitution of the host.

Mariology - Course

http://ocw.jhsph.edu/courses/malariology/ (http://ocw.jhsph.edu/courses/malariology/)

Authors: multiple

Source: Johns Hopkins

License: Creative Commons Attribution-Noncommercial-Share Alike 2.0 Unported License.

Description: Presents issues related to malaria as a major public health problem. Emphasizes the biology of malaria parasites and factors affecting their transmission to humans by anopheline vectors. Topics include host-parasite-vector relationships; diagnostics; parasite biology; vector biology; epidemiology; host immunity; risk factors associated with infection, human behavior, chemotherapy, and drug resistances; anti-vector measures; vaccine development; and management and policy issues.

Epidemiology of Infectious Diseases - Course

http://ocw.jhsph.edu/courses/EpiInfectiousDisease/index.cfm
(http://ocw.jhsph.edu/courses/EpiInfectiousDisease/index.cfm)

Authors: Kenrad Nelson

Source: Johns Hopkins

License: Creative Commons Attribution-Noncommercial-Share Alike 2.0 Unported License.

Description: Introduces the basic methods for infectious disease epidemiology and case studies of important disease syndromes and entities. Methods include definitions and nomenclature, outbreak investigations, disease surveillance, case-control studies, cohort studies, laboratory diagnosis, molecular epidemiology, dynamics of transmission, and assessment of vaccine field effectiveness. Case-studies focus on acute respiratory infections, diarrheal diseases, hepatitis, HIV, tuberculosis, sexually transmitted diseases, malaria, and other vector-borne diseases.

Image Library

http://ocw.jhsph.edu/imageLibrary/ (http://ocw.jhsph.edu/imageLibrary/)

License: Creative Commons Attribution-Noncommercial-Share Alike 2.0 Unported License.

Description: The JHSPH provides an OpenCourseWare Image Library. Search or browse to find and download hundreds of images from OCW courses. Most images are licensed for reuse, and their incorporation into your own educational materials is encouraged by The Johns

Hopkins Bloomberg School of Public Health as part of our commitment to the open sharing of educational resources.

Anaerobic infections - Lecture Series

http://open.umich.edu/education/med/oernetwork/med/microbiology/anaerobi...
(http://open.umich.edu/education/med/oernetwork/med/microbiology/anaerobic-infections/2010)

Author: Cary Engleberg (University of Michigan)

Source: African Health OER Network

License: Creative Commons Attribution license.

Description: 3-part lecture series about infections with Gram-negative obligate anaerobes

Cases in Clinical Microbiology - Interactive Module

http://web.knust.edu.gh/oer/pages/index.php?siteid=knustoer&page=find_ma...
(http://web.knust.edu.gh/oer/pages/index.php?siteid=knustoer&page=find_materials&cou=8)

Alternative Link: http://open.umich.edu/education/med/oernetwork/med/microbiology/clinical...
(http://open.umich.edu/education/med/oernetwork/med/microbiology/clinical-micro-cases/2009)

Author: Cary Engleberg (University of Michigan) and Yaw Adu-Sarkodie (KNUST)

Source: African Health OER Network

License: Creative Commons Attribution license

Description: HTML-based Interactive learning module with text, videos, and animations. Addresses topics such as: Gram-positive cocci, Gram-positive bacilli, Gram-negative cocci, Gram-negative bacilli, Mycobacteria, Other Bacteria, Spirochetes, and Fungi.

Fastidious Gram-negative bacteria - Lecture

http://open.umich.edu/education/med/oernetwork/med/microbiology/fastidio...
(http://open.umich.edu/education/med/oernetwork/med/microbiology/fastidious-gram-negative-bacteria/2010)

Author: Cary Engleberg (University of Michigan)

Source: African Health OER Network

License: Creative Commons Attribution license.

Description: A single lecture about bacterial vaginosis, HACEK infections, and legionella.

Laboratory Methods for Clinical Microbiology - Interactive Module

http://web.knust.edu.gh/oer/pages/index.php?siteid=knustoer&page=find_ma...
(http://web.knust.edu.gh/oer/pages/index.php?siteid=knustoer&page=find_materials&cou=10)

Alternative Link: http://open.umich.edu/education/med/oernetwork/med/microbiology/clinical...
(http://open.umich.edu/education/med/oernetwork/med/microbiology/clinical-microbio-lab/2009)

Author: Cary Engleberg (University of Michigan), Yaw Adu-Sarkodie (KNUST), Charles Agyei Osei (KNUST)

Source: African Health OER Network

License:Creative Commons Attribution-NonCommercial license

Description: HTML-based Interactive learning module with text, videos, and animations. Addresses topics such as: Microbiological stains, Antibody-based identification of pathogens, Assessing the accuracy of diagnostic tests, Measuring antibody response to infection, Detection of microbial antigens, Nucleic acid amplification (PCR)

Microbiology - Full Undergraduate Course

http://www.saylor.org/courses/bio307/ (http://www.saylor.org/courses/bio307/)

Author: various; curated by Saylor.org

Source:OER Commons

License: Various

Description: This course will cover a range of diverse areas of microbiology, including virology, bacteriology, and even applied microbiology (i.e. how humans have put microbes to productive use). This course will focus on the medical aspects of microbiology, as medical research has been the primary motivator in microbiology research.

Systems Microbiology - Full undergraduate course

http://ocw.mit.edu/courses/biological-engineering/20-106j-systems-microb... (http://ocw.mit.edu/courses/biological-engineering/20-106j-systems-microbiology-fall-2006/)

Author: Prof. David Schauer and Prof. Edward DeLong (Massaachusetts Institute of Technology)
Source: OER Commons
License: Creative Commons Attribution-Noncommercial-Share Alike 3.0
Description: This course covers introductory microbiology from a systems perspective, considering microbial diversity, population dynamics, and genomics. Emphasis is placed on the delicate balance between microbes and humans, and the changes that result in the emergence of infectious diseases and antimicrobial resistance. The case study approach covers such topics as vaccines, toxins, biodefense, and infections including Legionnaire's disease, tuberculosis, Helicobacter pylori, and plague.

Wanda's Woes: Case Study

Download: https://open.umich.edu/wiki/images/0/01/KNUST_OER_request_-_MedEdPORTAL-... (https://open.umich.edu/wiki/images/0/01/KNUST_OER_request_-_MedEdPORTAL-microbiology.zip)
(Original: https://www.mededportal.org/publication/8083 (https://www.mededportal.org/publication/8083))
Author: Smith A, Stein D (University of Maryland)
Source: MedEdPORTAL
License: Creative Commons Attribution-Noncommercial-Share Alike 3.0
Description: This case study was developed to support learning of infectious disease concepts in a general microbiology course. Students will consider the characteristics of various species of Streptococci (pathogenic and nonpathogenic) as they follow the story of the infant Frederica exhibiting various disease conditions.

Cases for Medical Physiology Small Group Discussions

Download: https://open.umich.edu/wiki/images/0/01/KNUST_OER_request_-_MedEdPORTAL-... (https://open.umich.edu/wiki/images/0/01/KNUST_OER_request_-_MedEdPORTAL-microbiology.zip)
(Original: https://www.mededportal.org/publication/530 (https://www.mededportal.org/publication/530))
Author: Zachow R, Schneider S, Kabis S, Das K, Zehring W. (Robert Wood Johnson Medical School)
Source: MedEdPORTAL
License: Creative Commons Attribution-Noncommercial-Share Alike 3.0
Description: The following set of cases was developed by Dr. Rob Zachow and a team of clinical faculty at Robert Wood Johnson Medical School (RWJMS) for use in Medical Physiology and M1-Integrated Cases; two courses were given to the medical students during M1 at RWJMS. The intent of developing these cases was to use detailed clinical presentations in order to extend the students' comprehension of Medical Physiology and to integrate this knowledge with that obtained in other M1 courses (e.g., Biochemistry, Microbiology, Cellular and Genetic Mechanisms, Neurophysiology, Gross Anatomy).

My colleague from University of Michigan and I searched for "molecular medicine" and "molecular biology" on the following websites: African Health OER Network, http://www.oercommons.org (http://www.oercommons.org), http://open.umich.edu (http://open.umich.edu), http://www.mededportal.org (http://www.mededportal.org), http://ocw.tufts.edu (http://ocw.tufts.edu), and http://ocw.jhsph.edu (http://ocw.jhsph.edu). Here's what we found:

At KNUST, a module on lipid metabolism is currently in the works. When ready, it will be posted at http://web.knust.edu.gh/oer. (http://web.knust.edu.gh/oer.)

A Manual of Online Molecular Biology Techniques

http://opencontent.uct.ac.za/node/76 (http://opencontent.uct.ac.za/node/76)
Author: Ed Rybicki (University of Cape Town)
Source: OER Commons
License: Creative Commons Attribution-Noncommercial-Share Alike 2.5
Description: technique descriptions used in teaching postgraduate students in the Department of Molecular & Cell Biology

Molecular Biology - Full undergraduate course

http://ocw.mit.edu/courses/biology/7-28-molecular-biology-spring-2005/ (http://ocw.mit.edu/courses/biology/7-28-molecular-biology-spring-2005/)
Author: Massachusetts Institute of Technology
Source: OER Commons:
License: Creative Commons Attribution-Noncommercial-Share Alike 3.0
Description: This course covers a detailed analysis of the biochemical mechanisms that control the maintenance, expression, and evolution of prokaryotic and eukaryotic genomes. The topics covered in lectures and readings of relevant literature include gene regulation, DNA replication, genetic recombination, and mRNA translation. In particular, the logic of experimental design and data analysis is emphasized.

Molecular Biology for the Auditory System - Full Undergraduate Course

http://ocw.mit.edu/courses/health-sciences-and-technology/hst-730-molecu... (http://ocw.mit.edu/courses/health-sciences-and-technology/hst-730-

molecular-biology-for-the-auditory-system-fall-2002/)

Authors: Prof. Bill Sewell, Prof. Charlie Liberman, Prof. Chen Zheng-Yi, Prof. Doug Cotanche, Prof. Heidi Rehm, Dr. Marley Kenna
Prof. Stefan Heller, Prof. Anne Giersch (Massachusetts Institute of Technology)
Source: OER Commons
License: Creative Commons Attribution-Noncommercial-Share Alike 3.0
Description: An introductory course in the molecular biology of the auditory system. First half focuses on human genetics and molecular biology, covering fundamentals of pedigree analysis, linkage analysis, molecular cloning, and gene analysis as well as ethical/legal issues, all in the context of an auditory disorder. Second half emphasizes molecular approaches to function and dysfunction of the cochlea, and is based on readings and discussion of research literature.

The Use of Cancer Biology To Augment Concepts In Core Curriculum Cellular and Molecular Biology - Tutorial

Download: https://open.umich.edu/wiki/images/4/4c/KNUST_OER_request_-_MedEdPORTAL-...
(https://open.umich.edu/wiki/images/4/4c/KNUST_OER_request_-_MedEdPORTAL-molecular_biology.zip)
(Original: https://www.mededportal.org/publication/8084 (https://www.mededportal.org/publication/8084))
Authors: Wentz-Hunter K (Roosevelt University)
Source: MedEdPORTAL
License: Creative Commons Attribution-Noncommercial-Share Alike 3.0
Description: By the conclusion of this module, students will be able to determine the consequences of abnormal cell functions and structures. Historically students learn about generic cellular functions and structures but do not make connections between the subtle changes that can lead to pathology. In an effort to address this disconnection, this exercise will introduce students to common abnormalities in cancer cell functions and their relationships to normal cell biology. In addition, this module will utilize recent advances for the production of induced pluripotent stem cells to address questions related to the restoration of normal cellular properties in cancer cells.

Late G1 Cell Cycle Molecular Pathways - Animation

Download: https://open.umich.edu/wiki/images/4/4c/KNUST_OER_request_-_MedEdPORTAL-...
(https://open.umich.edu/wiki/images/4/4c/KNUST_OER_request_-_MedEdPORTAL-molecular_biology.zip)
(Original: https://www.mededportal.org/publication/1159 (https://www.mededportal.org/publication/1159))
Authors: Cushman D, Warren R (University of Miami)
Source: MedEdPORTAL
License: Creative Commons Attribution-Share Alike 3
Description: This presentation demonstrates a principal pathway of stimulation involving chain reactions of cyclins and kinases whose actions are focused around the phosphorylation of a master switch, the tumor suppressor retinoblastoma. Overlaid on this stimulatory pathway are inhibitory inputs that focus on another tumor suppressor, p53, which can act to stop DNA synthesis temporarily until damage is repaired or to shunt the cell into a suicide pathway (apoptosis) if replication is inappropriate.
Students can selectively view the animations of the various stimulatory and inhibitory pathways and observe how the outcomes affect the overall process of G1 to S-phase transition.

Oncogene/Tumor Suppressor Molecular Pathways - Animation

Download: https://open.umich.edu/wiki/images/4/4c/KNUST_OER_request_-_MedEdPORTAL-...
(https://open.umich.edu/wiki/images/4/4c/KNUST_OER_request_-_MedEdPORTAL-molecular_biology.zip)
(Original: https://www.mededportal.org/publication/7925 (https://www.mededportal.org/publication/7925))
Authors: Cushman D, Warren R (University of Miami)
Source: MedEdPORTAL
License: Creative Commons Attribution-Noncommercial-Share Alike 3.0
Description: Tumor suppressor genes and oncogenes are involved in a complex network of intra- and extracellular components that ultimately result in uncontrolled cell reproduction or apoptosis. Multiple pathways of stimulation and inhibition converge, and it can be difficult for students to comprehend how all these inputs influence the outcome. This presentation demonstrates an overview of the main genes and molecules associated with cancer cells. Additionally, it portrays the mechanisms by which they exert their effect. Students can selectively view the animations of the various stimulatory and inhibitory pathways and observe how the outcomes affect the overall process.

A collegue from University of Michigan and I searched for "immunology"from the following websites: African Health OER Network, http://www.oercommons.org (http://www.oercommons.org), http://open.umich.edu (http://open.umich.edu), http://www.mededportal.org (http://www.mededportal.org), http://ocw.tufts.edu (http://ocw.tufts.edu), and http://ocw.jhsph.edu (http://ocw.jhsph.edu).
Here's what we found:

Immunology - Full Undergraduate Course

http://www.saylor.org/courses/bio407/ (http://www.saylor.org/courses/bio407/)
Author: Various; curated by Saylor.org

Source: OER Commons

License: Various

Descriptopn: This course studies the body's defenses against foreign invaders in great detail.

Cellular and Molecular Immunology - Full Post-Graduate Course

http://ocw.mit.edu/courses/health-sciences-and-technology/hst-176-cellul... (http://ocw.mit.edu/courses/health-sciences-and-technology/hst-176-cellular-and-molecular-immunology-fall-2005/)

Author: Dr. Shiv Pillai (Massachusetts Institute of Technology)

Source: OER Commons

License: Creative Commons Attribution-Noncommercial-Share Alike 3.0

Description: Covers cells and tissues of the immune system, lymphocyte development, the structure and function of antigen receptors, the cell biology of antigen processing and presentation including molecular structure and assembly of MHC molecules, lymphocyte activation, the biology of cytokines, leukocyte-endothelial interactions, and the pathogenesis of immunologically mediated diseases. Consists of lectures and tutorials in which clinical cases are discussed with faculty tutors.

Immune Evasion: How Sneaky Pathogens Avoid Host Surveillance - Full Undergraduate Course

http://ocw.mit.edu/courses/biology/7-340-immune-evasion-how-sneaky-patho... (http://ocw.mit.edu/courses/biology/7-340-immune-evasion-how-sneaky-pathogens-avoid-host-surveillance-spring-2004/)

Author: Dr. Dina Gould Halme (Massachusetts Institute of Technology)

Source: OER Commons

License: Creative Commons Attribution-Noncommercial-Share Alike 3.0

Description: This course is an advanced undergraduate seminar based upon discussions and critical analysis of primary literature in the field of immunology. Every infection consists of a battle between the invading pathogen and the resisting host. To be successful, a pathogen must escape the many defenses of the host immune system until it can replicate and spread to another host. A pathogen must prevent one of three stages of immune function: detection, activation, or effector function. Examples of disease specific immune evasion and the mechanisms used by pathogens to prevail over their host's immune systems are discussed. What these host-pathogen interactions reveal about the normal function of the immune system and about basic cell biological processes, such as protein maturation and degradation, are also considered.

Evolution of the Immune System

http://ocw.mit.edu/courses/biology/7-345-evolution-of-the-immune-system-... (http://ocw.mit.edu/courses/biology/7-345-evolution-of-the-immune-system-spring-2005/)

Author: Dr. Nadia Danilova (Massachusetts Institute of Technology)

Source: OER Commons

License: Creative Commons Attribution-Noncommercial-Share Alike 3.0

Description: In this course, evolutionary pathways that have led to the development of innate and adaptive immunity are analyzed, the conserved and unique features of the immune response from bacteria to higher vertebrates is traced, and factors, such as adaptive changes in pathogens that have shaped the evolution of immune system are identified.

Infectivity Groups - Lecture Notes

http://cnx.org/content/m41460/latest/ (http://cnx.org/content/m41460/latest/)

Author: Robert G. Whiddon, Ph.D

Source: Connexions

License: Creative Commons Attribution 3.0

Description: Describes infectivity groups as a method to organize the study of microbiology.

First Distinguished Bristol-Myers Squibb Lecture in Immunology - Video

http://ocw.uci.edu/lectures/lecture.aspx?id=243 (http://ocw.uci.edu/lectures/lecture.aspx?id=243)

Author: Michael D. Cahalan (University of California, Irvine)

Source: Connexions

License: Creative Commons Attribution-Share Alike3.0

Description: This is the first Distinguished Lecture in Immunology supported by Bristol-Myers Squibb. UC IRVINE INSTITUTE FOR IMMUNOLOGY presents Michael D. Cahalan, Ph.D., Professor and Chair Department of Physiology and Biophysics Institute for Immunology University of California, Irvine. Lecture delivered on June 17, 2010. Dr. Cahalan was recently elected to the National Academy of Sciences.