Teachers, I have included the new World Health Science TEKS by each unit below to help you align your topics.

World Health Research

at *DeBakey High School For Health Professions*

Health Science III

Course Syllabus: 2009 - 2010

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Course Description

This multidisciplinary senior Health Science course examines major world health problems, disease patterns and distribution, health care systems, and emerging medical technologies as solutions to global health concerns. This is a project-centered class whereby students are required to participate in labs, activities, research, and presentations.

Lessons in this course are designed to improve students' understanding of geographical, cultural, infrastructural, political, educational, and technological constraints regarding healthcare. The aim of this course is to encourage ideas as solutions to global medical problems.

Course Objectives

Students are expected to:

1. Identify and discuss the history of disease and the parallel development of medical technology.
2. Classify and compare healthcare systems around the world.
3. Investigate ways in which globalization has affected world health.
4. Describe the major human health problems in the world today.
5. Explore the leading chronic health conditions, which affect people worldwide.
6. Examine emerging and re-emerging infectious diseases and discuss treatment options in both developed and developing countries.
7. Investigate life-threatening perinatal conditions in developing countries.
8. Define epidemiology and explain how epidemiologists track global diseases.
9. Calculate incidence and prevalence of diseases within a population.
10. Identify bioengineering developments, which address: screening, diagnosing, preventing, and treating of diseases and conditions.
11. Research, design, and present a novel medical project, which would be beneficial for developing countries.

Scope & Sequence of Topics

FOUNDATION LESSONS:

- Introduction to World Health Research
- Teaming and Collaboration
- How to Prepare and Give Professional Presentations

CORE LESSONS:

Unit I: History of Disease and Medical Technology (TEKS 130.209. 1B)

- Examine parallels between disease and technology from prehistorical times to present.

Unit II: Healthcare Systems and Health Reform (TEKS 130.209. 2 A, 2 B, 2 C, 2 D, 2 E)

- Contrast US healthcare system with other developed countries and their healthcare systems.
- Compare the availability of healthcare in developed and developing worlds.
- Describe how health care expenditures have changed over time.
- Explain the major contributors to health care costs.
- Debate health reform in the U.S.

Unit III: Global Health and Economic Data (TEKS 130.209. 1 C, 1 D, 1 E, 1 F)

- Explain the difference between *developed countries*, *developing countries*, and *least developed countries*.
- Explain the responsibilities and functions of the World Health Organization (WHO) and Center for Disease Control and Prevention (CDC).
- Describe types of health information collected by public health agencies.
- Define the following terms: morbidity, mortality, incidence, and prevalence.
- Calculate incidence and prevalence rates of diseases in population.
- Give examples of reportable/notifiable diseases and explain why they are carefully monitored.
- Discuss and give an example of *Disability Adjusted Life Years* (DALYs)
- Explain how societies use health data.
- Identify the "Father of Epidemiology" and explain the economic data he collected in 1854 Soho, England to help identify the source of the cholera outbreak.

Unit IV: Public Health and Epidemiology (TEKS 130.209. 1 E; 4 A, B, C; 5 A, B. C, D)

- Discuss the focus of Public Health.
- Describe the primary functions of the Center for Disease Control and Prevention (CDC) and the World Health Organization (WHO).
- Analyze the "Essential Questions" and "Enduring Understandings" of epidemiology.
- Define and calculate incidence, morbidity, and mortality.
- Explain the types of health events public health professionals explore.
- List the steps in an outbreak investigation.
- Describe the types of health data epidemiologists collect.
- Carry out the initial steps of an epidemiological investigation and develop biologically plausible hypotheses.
- Apply epidemiologic methods to the measurement of disease rates, prevention of infectious diseases, and the development and evaluation of health programs and policies

Unit V: Leading chronic/age-related health conditions (TEKS 130.209. 1 A, 3 C, 3 D, 3 E, 3 F)

- Review the cardiovascular system
- Research and prepare presentations over the following chronic diseases: coronary artery disease, cerebrovascular disease, and high-risk cancers.

Unit VI: Infectious Diseases (TEKS 130.209. 1 A, 3 A)

- Describe the pathophysiology of the following infectious diseases:
  1. Malaria
  2. HIV/AIDS

3. Tuberculosis
4. Hepatitis (A, B, C)
5. Onchocerciasis ("River Blindness")
6. Schistosomiasis
7. Typhoid fever
8. Yellow fever

Unit VII: Perinatal Conditions (TEKS 130.209. 1 A, 3 A)

- Describe the following perinatal conditions: incompetent cervix, placenta previa, abruptio placentae hydramnios, and puerperal fever (childbed fever).
- Explain prolonged labor and obstructed labor.

Unit VIII: Immunity & Vaccinations (TEKS 130.209. 3 B)

- Review and illustrate organs of the immune system.
  - Describe functions of immune cells.
  - Name the three lines of defense and tell how they each protect the body.
  - Define *antibodies*, *antigens*, *allergens* and the *complement system*.
  - Explain how hormones affect the immune system
  - Investigate immunity and the role of vaccines.

Unit IX: Globalization and Health (TEKS 130.209. 1 F, 3 A, 2 A)

- Define globalization and explain how it relates to health.
- Describe how globalization is promoting both the rapid spread and effective treatment of highly contagious diseases.

Unit X: Research & Cutting-edge Medical Technologies (TEKS 130.209. 6 A, 6 B, 6 C)

- Research emerging medical technologies.
- Describe the steps of technology assessment.
- Discuss clinical trials and ethics.
- Illustrate and report about a specific bioengineering technology.

Unit XI: Presentations/Projects (TEKS 130.209. 7 A, 7 B)

- Design an end-of-year group presentation.
- Participate in group dress rehearsal presentations.
- Deliver end-of-year professional presentation to peers and teacher.

Support Materials

- Text: *Bioengineering for Global Health*, Rebecca Richards-Kortum
- Handouts (some will be online, others will be provided by teacher)
- Classroom computers
- Flash drive (you must provide)
- Pack of highlighters (at least 4 different colors, e.g. pink, blue, yellow, green)
- Note cards

Online Assignment Page

Students will use my teacher webpage to retrieve announcements, online assignments, extra lecture handouts, and interactive online activities.

- URL: http://www.quia.com/pages/debakeyhs.html
- There will be a short online orientation over Quia at the beginning of the term.

Absences & Makeup Work

Classwork

- If you are absent, I expect you to check my teacher webpage to see what you missed.
- You can retrieve missed handouts by going to my teacher homepage and clicking on Student Handouts.
- Please copy any missed class notes from a fellow student.

Exams

- If you miss an exam, ***you*** must re-schedule the exam upon your return to school.
- I will not seek you out and remind you to makeup your exam—this is your responsibility!
- All make-up exams must be taken within two days as per school policy.

☑®CheckPoint Tests

- Instructional PowerPoint presentations will include short quizzes known as ☑CheckPoint® tests. After every 5 to 8 PPT slides, there will be several questions testing your knowledge over the previously viewed slides. Most ☑CheckPoint tests have approximately 25 to 30 questions. There is **no** note-taking during these PowerPoint presentations. This is an exercise in *active listening*. Students are expected to practice dynamic listening then write the answers to the ☑CheckPoint questions as they appear during the presentation.

End-of-Term Project/Presentation

- Each investigative group will develop a world health-related project and presentation, which will be professionally presented to the class at the end of the term.

Field Lessons/Seminars

- During the year, field lessons and/or seminars may be scheduled at a medical and/or research facility. Please make sure that you complete the following forms, which can be found on my teacher webpage under FORMS:

  1) HISD Field Lesson Permission form **2)** HISD Medical Liability

Conference Period

- I am available for conference on "B-days" during 5th and 7th periods. (12:50 p.m. – 3:15 p.m.)
- Please make an appointment if you or your parents wish to speak with me during that time.

Grading Scale/Weights

Grades will be assigned on the following basis:

- "A" (90-100) for demonstrated competence with excellence
- "B" (80-89) for demonstrated competence that was above average (good)
- "C" (75-79) for competence that was average
- "D" (70-74) for competence that was marginal
- "F" (69 and below) for failing to meet the basic requirements of course

Final Exam:

- Three weeks before the end of this course, you will have access to an online, end-of-term review, which will help you prepare for your comprehensive final exam.
- Your final exam will include an end-of-term essay. The essay portion will be assigned four weeks before the term is over.
  - The written exam will count 85% and the essay portion will count 15%.