Stony Brook University
School of Health, Technology and Management
Health Science Program
Spring 2014

HAN 452: Epidemiology and Biostatistics (3 credits)
Section: 1
Class #:

Instructor: Alan S. Cooper, MD MPH
E-mail: alan.cooper@stonybrook.edu
Phone: Office: 631-638-1244
Cell: 631-617-7054
Office: SHTM Room 417 Level 2, HSC
Day/Time: Friday 9AM – 10:30AM or by Appointment

Course Description:
This course provides students with the general basic knowledge and skills required for understanding study approaches for investigating diseases and health issues in the population. The course covers application of epidemiologic procedures to the understanding of the occurrence and control of conditions such as infections and chronic diseases, mental disorders, community and environmental health hazards, accidents, and geriatric problems. Students are introduced to biostatistical approaches used for collecting and organizing data along with epidemiological concepts, limitations, and resources. The course will include examining various epidemiological models used regionally, nationally, and internationally. In addition, this course includes discussions about ethical situations related to research and statistical studies.

Goal:
To gain a basic understanding of techniques used to study disease in populations.
Behavioral Objectives: Upon completion of this course, students should gain an understanding of the following:

1. Epidemiology as a tool for assessing potential causal associations, health needs of a population, delivery of services, program planning, and social policy.
2. Assessment of the validity and reliability of such data collection mechanisms as death certificates, patient charts, agency records, and personal surveys.
3. Measurements of mortality and morbidity (rates, ratios, and adjusted rates) and the major sources of error in measurement of disease.
4. Descriptive epidemiology: the amount and distribution of disease within a population by person, place, and time.
5. Research designs such as retrospective (case-control), prospective (cohort), historical prospective, cross-sectional, and experimental (clinical and community trials).
7. Population dynamics and health with respect to the stages in demographic transition and trends in the U.S. and world populations.
8. Epidemiologic aspects of infectious disease (variations in severity of illness, components of the infectious disease process, mechanism of disease transmission, and common source versus propagated).
9. Epidemiologic aspects of chronic disease (multi-factorial nature of etiology, long latency period, indefinite onset, and differential effect of factors on incidence and course of disease). Describe survival rate terms and their uses.
10. Distinguish between mean, median, mode and standard deviation and their use.
11. Describe survival rate terms and their uses.
12. Describe the ethical issues in carrying out epidemiological studies.

Required Text:
Friss, Robert H.; Sellers, Thomas A.: Epidemiology for Public Health Practice; Fifth Edition

Teaching Strategies: Lecture format with student discussion

Evaluation:
Three Tests 20% each x 3 = 60%
Final: 30%
Attendance/Participation: 10%
<table>
<thead>
<tr>
<th>Class #</th>
<th>Date</th>
<th>Time</th>
<th>Course Title</th>
<th>Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class #1</td>
<td>Friday January 31, 2104</td>
<td>1, 2104</td>
<td>What is epidemiology? Assignment: Chapter 1</td>
<td>Friis and Sellers (5th Ed.)</td>
</tr>
<tr>
<td>Class #2</td>
<td>Friday February 7th</td>
<td>2 Friis and Sellers (5th Ed.)</td>
<td>Applications of Epidemiology Assignment Chapter 2</td>
<td></td>
</tr>
<tr>
<td>Class #3</td>
<td>Friday February 14th</td>
<td>Measurements of Morbidity and Mortality Assignment Chapter 3</td>
<td>Friis and Sellers (5th Ed.)</td>
<td></td>
</tr>
<tr>
<td>Class #4</td>
<td>Friday February 21th</td>
<td>11AM - 12:15PM</td>
<td>Descriptive Epidemiology Assignment Chapter 4</td>
<td>Friis and Sellers (5th Edition)</td>
</tr>
<tr>
<td>Class #5</td>
<td>Friday February 28th</td>
<td>12:30 - 2PM</td>
<td>Data Sources for Epidemiology Assignment Chapter 5</td>
<td>Friis and Sellers (5th Ed.)</td>
</tr>
<tr>
<td>Class #6</td>
<td>Friday March 7th</td>
<td>Study Designs - Ecological Studies, Cross Sectional Studies, Case Controls Assignment Chapter 6</td>
<td>Friis and Sellers (5th Ed.)</td>
<td></td>
</tr>
<tr>
<td>Class #7</td>
<td>Friday March 14th</td>
<td>-Study Designs, Cohort Studies Assignment Chapter 7</td>
<td>Friis and Sellers (5th Ed.)</td>
<td></td>
</tr>
<tr>
<td>Spring Recess</td>
<td>March 17th - March 23rd</td>
<td>(no classes)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class #8</td>
<td>Friday March 28th</td>
<td>11AM - 12:15PM</td>
<td>Experimental Designs Assignment Chapter 8</td>
<td>Friis and Sellers (5th Edition)</td>
</tr>
<tr>
<td>Class #9</td>
<td>Friday April 4th</td>
<td>12:30 - 2PM</td>
<td>Relative and Absolute risk, Confidence Intervals Assignment Chapter 9</td>
<td>Friis and Sellers (5th Ed.)</td>
</tr>
<tr>
<td>Class #10</td>
<td>Friday April 11th</td>
<td>Errors, Biases and Confounders Assignment Chapter 10</td>
<td>Friis and Sellers (5th Ed.)</td>
<td></td>
</tr>
<tr>
<td>Class #11</td>
<td>Friday April 18th</td>
<td>How do we Decide Which Diseases Should be Screened for. What Makes a Good Screening test. Sensitivity and Specificity. Assignment Chapter 11</td>
<td>Friis and Sellers (5th Ed.)</td>
<td></td>
</tr>
<tr>
<td>Class #12</td>
<td>Friday April 25th</td>
<td>11AM - 12:15PM</td>
<td>Epidemiology of Infectious Disease Assignment Chapter 12</td>
<td>Friis and Sellers (5th Ed.)</td>
</tr>
<tr>
<td>Class #13</td>
<td>Friday May 2nd</td>
<td>12:30 - 2PM</td>
<td>Molecular and Genetic Epidemiology Assignment Chapter 5</td>
<td>Friis and Sellers (5th Ed.)</td>
</tr>
<tr>
<td>Class #14</td>
<td>Friday May 9th</td>
<td>Topics in Biostatistics Assignment TBA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Final Exam</td>
<td>Friday May 16th</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Students are expected to attend all class sessions and are required to sign the attendance sheet at each lecture; failure to sign the sheet will result in a deduction of
points. Students are allowed two absences without penalty. More than two absences, as well as excessive lateness, will result in lower participation grades. Participation grades are at the instructor’s discretion and will be based, in part, upon timely attendance and class discussion.

Access to our class’s on-line Blackboard site:

You can access class information on-line at: http://blackboard.sunysb.edu. If you have used Stony Brook’s Blackboard system previously, your login information (Username and Password) has not changed. If you have never used the Blackboard system, your initial password is your SOLAR ID# and your username is the same as your Stony Brook username, which is generally your first initial and the first 7 letters of your last name.

For help or more information, see: http://www.sinc.sunysb.edu/helpdesk/docs/blackboard/bbstudent.php

For problems logging in, go to the helpdesk in the Main Library SINC Site or the Union SINC site. You can also call: 631-632-9602 or email: helpme@ic.sunysb.edu.

Americans with Disabilities Act:

If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services, ECC (Educational Communications Center) Building, room128, (631) 632-6748. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential.

Academic Integrity:
Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report and suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (Schools of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at http://www.stonybrook.edu/uaa/academicjudiciary/

Critical Incident Management:

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and School of Medicine are required to follow their school-specific procedures.

Students are expected to attend all class sessions and are required to use their clickers throughout the class for credit; students not actively participating throughout class with clickers will have points deducted from their class participation grade. Students are allowed two absences without penalty. More than two absences, as well as excessive lateness, will result in lower participation grades. Participation grades are at the instructor’s discretion and will be based, in part, upon timely attendance and class discussion.

Procedure to Request an Excused Absence:

Excused absence petitions must be submitted in writing either 1) one week prior to an expected absence (i.e., court appearance, doctor visit, family event, etc.) or 2) no later than one week after an unexpected absence (i.e., death in family, surgery, car accident, etc.). Failure to follow this procedure will result in denial of the petition and negatively impact class attendance, participation and make up work including quizzes &
exams. Proper documentation must accompany the request (i.e. court papers, doctor note).

[Please Note: An excused absence does not excuse student from making up coursework and may impact the participation grade.]

Quizzes & Exams will begin on time and any student arriving after 10 minutes from the start, will not be able to take the quiz/exam and will receive a “0” for that quiz/exam. There are no makeup quizzes or exams without an approved excused absence. For those students with an excused absence, the quiz/exam must be completed prior to the next class. The makeup quiz/exam will consist of short answers; fill in the blanks as well as other test formats. For any missed quizzes, exams or assignments a “0” will be recorded. Please note there is no extra credit, extra assignments or additional work given or accepted to raise a student’s grade.