Epidemiology for Developing Countries (EPI 415) (1/5/08)
Winter Quarter, 2008

Time: Tuesdays & Thursdays, 3-5 PM
Location: Room 71-257 CHS
Instructors: Ralph R. Frerichs, D.V.M., Dr.P.H.
Anne W. Rimoin, M.P.H., Ph.D.

Course Description
This course features the practical use of epidemiology, public policy, microcomputers, and spreadsheet models for estimating morbidity and mortality, developing intervention or prevention strategies, and setting program priorities in developing country settings. The course also examines the process of policy formulation and resource allocation to international health and disease control EPI 415 will be taught by Professors Ralph R. Frerichs and Anne W. Rimoin, who both have extensive experience in the less-developed world.

Prerequisites
Epidemiology 100 and/or Epidemiology 200A, and Biostatistics 100A.

Course Objectives
To provide the student with the following:
1) an introduction to the epidemiological basis for disease prevention and control programs in the developing world.
2) an overview of simple, practical methodologies to obtain and validate information regarding the health status and health services in developing countries
3) an understanding of the usefulness and validity of epidemiologic data sources in developing countries.
4) An understanding of how to use epidemiologic data to inform setting health program priorities

Course Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Session</th>
<th>Instructor</th>
<th>Topic</th>
<th>Assigned Reading</th>
</tr>
</thead>
</table>
| 1/8  | 1       | Frerichs   | Course Introduction - Software Training Manual | Smith, 2007  
Frerichs, 2006 |
| 1/10 | 2       | Rimoin     | Health in the context of international development  
Understanding the multiple links between poverty and health. The UN Millennium Development Goals. Epidemiology in developing countries vs. the rest of the world. International development and linkages with health research. | Delisle, 2005  
Labonte, 2003 |
| 1/15 | 3       | Rimoin     | Health and Development Indicators  
Review of simple, practical methodologies to obtain and validate information regarding health status and health services in developing countries. Evaluation of the usefulness, validity, limitation of resources for measuring population health.  
Problem #1 handed out | Murray, 2007  
Victora, 2007 |
| 1/17 | 4       | Rimoin     | Health status and key interventions.  
Understanding key technical interventions for improving population health and recognizing how | Black, 2003  
Victora, 2007 |
these interventions relate to one another for making strategic choices about health sector policy and programs.

<table>
<thead>
<tr>
<th>Date</th>
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</thead>
<tbody>
<tr>
<td>1/22</td>
<td>5</td>
<td>Frerichs</td>
<td>Strategies for disease control 1</td>
<td>Walsh, 1980</td>
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<tr>
<td>1/24</td>
<td>6</td>
<td>Frerichs</td>
<td>Strategies for disease control 2</td>
<td>Chen, 1986</td>
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<tr>
<td>1/29</td>
<td>7</td>
<td>Frerichs</td>
<td>Uses of routinely derived epidemiologic data</td>
<td>Cullen, 1984 Frerichs, 1991</td>
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<td>2/5</td>
<td>9</td>
<td>Frerichs</td>
<td>Establishing program priorities based on the burden of illness 1</td>
<td>Bennett, 1990a</td>
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<tr>
<td>2/7</td>
<td>10</td>
<td>Frerichs</td>
<td>Establishing program priorities based on the burden of illness 2</td>
<td>Bennett, 1990b</td>
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<tr>
<td>2/12</td>
<td>11</td>
<td>Frerichs</td>
<td>Measuring the impact of illness</td>
<td>Romeder, 1977</td>
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<td>- potential years of life lost Problem #1 due</td>
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<tr>
<td>2/14</td>
<td>12</td>
<td>Frerichs</td>
<td>Measuring the impact of illness</td>
<td>Ghana, 1981</td>
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<td></td>
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<td></td>
<td>- days of healthy life lost</td>
<td></td>
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<tr>
<td>2/21</td>
<td>14</td>
<td>Frerichs</td>
<td>Measuring the effectiveness of immunization programs</td>
<td>Chen, 1996 Torvaldsen, 2002</td>
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<tr>
<td>2/26</td>
<td>15</td>
<td>Frerichs</td>
<td>Cost and effectiveness of immunization programs Problem #2 out</td>
<td>Vijayaraghavan, 2006</td>
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<td>2/28</td>
<td>16</td>
<td>Frerichs</td>
<td>Global Burden of Disease Study Final Problem out</td>
<td>Lopez, 2005</td>
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<td>3/4</td>
<td>17</td>
<td>Frerichs</td>
<td>Disability-adjusted life years</td>
<td>McKenna, 2005 Chapman, 2006</td>
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<td>3/6</td>
<td>18</td>
<td>Frerichs</td>
<td>Spreadsheet models for focusing research on high-yield strategies</td>
<td>Enarson, 2005 Frerichs, 1989</td>
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<td>3/11</td>
<td>19</td>
<td>Frerichs</td>
<td>Spreadsheet models for focusing research (continued)</td>
<td>Miller, 1993</td>
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<td>3/13</td>
<td>20</td>
<td>Frerichs</td>
<td>Future health problems in developing countries</td>
<td>Mathers, 2006</td>
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<td>3/21</td>
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<td>Final Problem (take home due, Noon)</td>
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**Materials:** The course readings and outline will be distributed on the course website.

**Grading:**
- Spreadsheet homework problem 1 (due 1/31/08) 15%
- Spreadsheet homework problem 2 (due 2/26/08) 25%
- Final problem (due 3/21/08) 60%

**References**


