

**EPIDEMIOLOGY FOR DEVELOPING COUNTRIES (EPI 415) (1/11/07)**  
**Winter Quarter, 2007**

**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**

Date	Session	Instructor	Topic	Assigned Reading
1/9	1	Frerichs	<b>Course Introduction</b> - Software Training Manual	Jong-wook, 2006 Frerichs, 2006
1/11	2	Rimoin	<b>Global health, research and sustainable development</b> Epidemiology in developing countries vs. the rest of the world. Colonialism, development and underdevelopment, political economy, culture, health behaviors, hierarchy, health care, NGOs and international development.	Delisle, 2005 Labonte, 2003 -responses, 2003 Ramsey, 2001
1/16	3	Rimoin	<b>Resources for measuring population health</b> Review of simple, practical methodologies to obtain and validate information regarding health status and health services in developing countries. <i>Problem #1 handed out</i>	Kindig, 2003, David, 2005
1/18	4	Rimoin	<b>Evaluating population health data</b> Evaluation of the usefulness, validity, limitation of vital records, health reports, household (and cluster) surveys, nutritional anthropometry, qualitative methods.	Raphael, 2002 Morris, 2000
1/23	5	Frerichs	<b>Strategies for disease control 1</b>	Walsh, 1980
1/25	6	Frerichs	<b>Strategies for disease control 2</b>	Chen, 1986

Date	Session	Instructor	Topic	Assigned Reading
1/30	7	Frerichs	<b>Uses of routinely derived epidemiologic data</b>	Cullen, 1984 Frerichs, 1991
2/1	8	Frerichs	<b>Uses and limitations of mortality data</b> <i>Problem #1 due</i>	Stalioraityte, 2005 Soleman, 2006 Setel, 2006
2/6	9	Frerichs	<b>Establishing program priorities based on the burden of illness 1</b>	Bennett, 1990a
2/8	10	Frerichs	<b>Establishing program priorities based on the burden of illness 2</b>	Bennett, 1990b
2/13	11	Frerichs	<b>Measuring the impact of illness</b> – potential years of life lost	Romeder, 1977
2/15	12	Frerichs	<b>Measuring the impact of illness</b> -days of healthy life lost -days of healthy life gained	Ghana, 1981
2/20	13	Frerichs	<b>Cost-benefit and cost-effectiveness analysis</b>	Meltzer, 2001 WER, 2006
2/22	14	Frerichs	<b>Measuring the effectiveness of immunization programs</b>	Chen, 1996 Torvaldsen, 2002
2/27	15	Frerichs	<b>Cost and effectiveness of immunization programs</b> <i>Problem #2 due</i>	Vijayaraghavan, 2006
3/1	16	Frerichs	<b>Global Burden of Disease Study</b>	Lopez, 2005
3/6	17	Frerichs	<b>Disability-adjusted life years</b>	McKenna, 2005 Chapman, 2006
3/8	18	Frerichs	<b>Spreadsheet models for focusing research on high-yield strategies</b>	Enarson, 2005 Frerichs, 1989
3/13	19	Frerichs	<b>Spreadsheet models for focusing research</b> (continued)	Miller, 1993
3/15	20	Frerichs	<b>Future health problems in developing countries</b>	Mathers, 2006
3/19	--		<b>Final Problem</b> (take home due, Noon)	--

\* To be assigned

**Materials:** The course readings and outline will be distributed on the course website.

**Grading:**

Spreadsheet homework problem 1 (due 2/1/07)	15%
Spreadsheet homework problem 2 (due 2/27/07)	25%
Final problem (due 3/19/07)	60%

## References

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2. **Frerichs, R. R.** Software Training Manual, Epidemiology for Developing Countries, EPI 415, December, **2006**.
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5. **Responses** in: <http://www.bmj.com/cgi/eletters/326/7392/722#30946>
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7. **Kindig D.**, Stoddart G. What is population health? *Am J Public Health* 93 (3), 380-383, **2003**.
8. **David, P.** And Haberlen, S. 10 best resources for... measuring population health. *Health Policy Planning* 20(4), 260-263, **2005**.
9. **Raphael, D.**, Bryant, T. The limitations of population health as a model for a new public health. *Health Promotion International* 17( 2), 189-198, **2002**.
10. **Morris, S.S.**, Carletto, C., Hoddinott, J., Christiaensen, L.J. Validity of rapid estimates of household wealth and income for health surveys in rural Africa. *J Epidemiol Community Health* 54(5):381-7, **2000**.
11. **Walsh, J.A.** and Warren, K.S.: Selective Primary Health Care: An Interim Strategy for Disease Control in Developing Countries. *Social Science and Medicine* 14C (Med Eco), 145-163, **1980**.
12. **Chen, L.C.**: Primary health care in developing countries: Overcoming operational, technical, and social barriers. *The Lancet* ii, 1260-1265, **1986**.
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15. **Stalioraityte, E.**, Pangonyte, D., Kazlauskaite, D. Reliability of cause-specific mortality rate statistics: case of Lithuania. *Public Health* 119(9):799-807, **2005**.
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17. **Setel, P.W.** , Rao, C., Hemed, Y., Whiting, D.R., Yang, G., Chandramohan, D., Alberti, K.G., Lopez, A.D. Core verbal autopsy procedures with comparative validation results from two countries. *PLoS Medicine* 3(8), 1282-1291. Aug., **2006**.
18. **Bennett, K.J.**, Tugwell, P., Sackett, D., and Haynes, B.: Chapter 27: Relative Risks, Benefits, and Cost of Intervention. in Warren, K.S. and Mahmoud, A.A.F. (eds): Tropical and Geographical Medicine, McGraw-Hill Book Co., New York, **1990**, pp. 205-228.
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20. **Ghana Health Assessment Project Team.** A Quantitative Method of Assessing the Health Impact of Different Diseases in Less Developed Countries. *International Journal of Epidemiology* 10, 73-80, **1981**.
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27. **McKenna, M.T.**, Michaud, C.M., Murray, C.J., Marks, J.S. Assessing the burden of disease in the United States using disability-adjusted life years. *American J Preventive Medicine* 28(5), 415-23, **2005**.
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