Syllabus for Population 135: "Causes and Consequences of Population Aging"

The course will meet three hours per week. There will be a term paper, a midterm, and a final exam. Prerequisites for the course include at least one prior course in demography, such as Econ 175, Population Studies 100 or 110, Sociology 176, or Anthro 194, or a course on aging in the School of Public Health (may be taken concurrently). The prerequisite may be waived with consent of the instructor. The technical level of the course will be tailored to the backgrounds of the students, and optional special sessions will be used to cover more technical topics, if necessary. Some background in economics will be useful, but is not required. Examinations will be constructed to accommodate students from a variety of backgrounds.

This course will examine the causes and consequences of population aging from a demographic perspective, with an emphasis on social and economic consequences of aging. We will begin by considering the demographic causes of population aging, rooted in declining fertility and mortality. We will study these processes separately, with particular emphasis on issues surrounding mortality, such as the question of limits to length of life, the reliability of mortality data for older ages, and problems in forecasting mortality at older ages. We will then assess the effects of changing vital rates on age distributions using stable population models and related analytics. Their dynamic role in the gerontological transition will also be considered. In addition, we will consider the epidemiological transition, and examine recent trends in health and disability, and expectation of active life. Are the gains in length of life mainly in years of disability? Can the age at retirement be raised? Are the data biased by changing economic incentives?

After considering these causes of population aging, we will turn to the social and economic arrangements through which the elderly are supported--the family, the public sector and life cycle saving, with or without financial markets. We will first study Third World populations, in which support is provided primarily within the family. The emphasis will be on Asian populations. We will then consider the role of life cycle saving, and its implications for capital accumulation and labor productivity. We will consider the relative importance of the bequest motive and life cycle saving as sources of wealth accumulation industrial populations. We will then consider the growth of public sector transfer systems, including pensions and health care, and their size and structure in the U.S. and other industrial nations. Transfers to the elderly will be considered in the context of transfers to all ages, and particularly to children. These various means of old age support will be integrated in a formal model of transfer systems and capital accumulation in populations with overlapping generations, which will be estimated for various populations. We will consider "generational accounting". This model, and other projections and simulations, will be used to assess the consequences of population aging due to fertility and mortality change for the macro-economy and for life cycle consumption and welfare. We will also consider issues of intergenerational equity and conflict. How does the federal debt constitute a transfer from unborn generations to those currently alive? Should young adult generations of today worry about the viability of the social security system in their older years?

We will then consider labor force issues. How is the productivity of workers related to their age? How will population aging affect the productivity, vitality and creativity of the labor force? Do internal labor markets lead to a systematic deviation of the age-earnings profile from the age-productivity profile? How do the public and private systems of taxation, pensions, disability insurance and health insurance influence the labor supply decisions of the elderly?

The last section of the course will provide an overview of the consequences of population aging, and an assessment of policy options.
CAUSES AND CONSEQUENCES OF POPULATION AGING: PRELIMINARY OUTLINE

I. GLOBAL POPULATION AGING: A DESCRIPTIVE OVERVIEW

II. MORTALITY DECLINE AND THE OLDER POPULATION
   A. Limits to length of life?
   B. The compression of morbidity
   C. Forecasting mortality
   D. Analytic issues in old age mortality
   E. Data issues and old age mortality

III. MORBIDITY AND DISABILITY IN THE OLDER POPULATION
   A. Theoretical perspectives: Selection vs Trauma Avoidance
   B. Epidemiological evidence
   C. Historical trends
   D. Economic analysis

IV. THE DEMOGRAPHY OF POPULATION AGING
   A. Lessons from Stable Population Tables
   B. Comparative Stable Populations: fertility decline
   C. Comparative Stable Populations: mortality decline
   D. Historical Patterns
   E. The Gerontological Transition
   F. Forecasts of the Elderly Population

V. THE ECONOMIC ANALYSIS OF POPULATION AGING

VI. LIFE CYCLE SAVING AND CAPITAL ACCUMULATION
   A. Basic analysis
   B. Empirics
   C. Consequences of changing fertility
   D. Consequences of changing mortality
VII. THE ECONOMICS OF TRANSFER SYSTEMS
   A. Examples: family, public sector, market
   B. Basic analysis
   C. Empirics
   D. Consequences of changing fertility
   E. Consequences of changing mortality

VIII. TRANSFER SYSTEMS IN THE THIRD WORLD
   A. Empirical studies of intra-familial transfers
      1. Asia
      2. SubSaharan Africa
   B. Simulation studies of intra-familial transfers in aging populations
   C. Public Sector programs in the Third World

IX. TRANSFER SYSTEMS IN THE INDUSTRIAL WORLD
   A. Empirical Studies of Intra-familial support
   B. Simulation Studies of kin-networks in aging populations
   C. Public Sector programs in industrial countries

X. THE ECONOMICS OF LABOR SUPPLY DECISIONS AT OLDER AGES
   A. The role of health and disability insurance
   B. The role of private pensions
   C. The role of public pensions

XI. CONSEQUENCES OF POPULATION AGING: AN ANALYTIC OVERVIEW
I. Background on Population Aging

To be done for Tuesday, September 1.


Background Descriptive Material (optional; browse):


Optional Analytic Material; recommended for technical demographers:


II. Demography 135: The Demography of Population Aging


Optional Addtional Reading on Mortality Change


for review; read after today's lecture

Lecture 1 in Lee, China Lectures, pp.8-14 "The Demography of Aging".

Lecture 2 in Lee, China Lectures, pp.15-22 "Economic Aspects of Dependency, Mortality Change and the Life Cycle".

Optional Technical


Lee Appendix to China Lectures (all eight pages; pages unnumbered).

Preston and Coale, as assigned last time.

Optional Reading on Gerontological Transition


Demography 135: Aging--Readings for September 15, 1992

**III. Consequences of Declining Mortality**

Readings are quite light for the coming week. I will be developing most of the lecture from Chapter 2 of the *China Lectures*, which you should not read in advance! A number of readings are to be found in:


You might want to skim some of the other articles in this collection.
Readings to do for class on September 22.

IV. Economic Status of the Elderly, and Overview of Retirement Behavior

Read Chapter 2 of my lectures as a review of class on September 15. If you have questions as read over it, bring them to class for discussion.


This is a lot of reading. It is not very demanding, but it is still quite a bit to read all at once. Again I suggest that you not leave all the reading to the Tuesday before class. Read the Schulz one day, the Hurd, another. They cover similar material from somewhat different perspectives.

V. Health and Retirement Behavior of the Elderly

Readings to do for class on September 29.

Read Chapter 2 of my China lectures as a review of class on September 15. If you have questions as you read over it, bring them to class for discussion.


VI. Aging and the Social Security System in the US

Readings to do for class on October 6.

Read Chapter 3, "Labor Supply, Health and Retirement," pages 23-31, of the China lectures as a review of class on September 29, plus for new material on aging and the labor force. Bring questions to class.

Henry Aaron, Barry Bosworth, and Gary Burtless (1989) *Can America Afford to Grow Old?* Chapters 1 (Introduction) and 2 (The Social Security and Medical Programs), pp.1-54
VII. The Demography of Pensions in Aging Populations, and The Demography of Familial Support for the Aged

Readings to do for class on October 13.

Henry Aaron, Barry Bosworth, and Gary Burtless (1989) Can America Afford to Grow Old? Read Chapter 3 if you have not already done so.


Optional:

Lawrence Kotlikoff (1992) Generational Accounting (Free Press), particularly the Chapter titled "Generational Accounting".

VIII. More on Familial and Public Sector Support for the Elderly

Readings to do for class on October 20. These are lighter than usual because you have the take-home midterm during the week.

Jiang Lin (1992) "Parity and Security: A Study of Old Age Support in Rural China"


IX. Intergenerational Transfers and Savings

Readings to do for class on October 27.

Ronald Lee, "Kinship, Demographic Change and Old Age Support," Chapter 5 of Lectures on Aging.


Readings to do for class on November 3. Readings are less because there is a homework problem assigned.


Ronald Lee, "Population Age Structure, Intergenerational Transfers, and Wealth: A New Approach, with Applications to the U.S."

X. Aging and the Social Sciences

Demography 135: Aging

Readings to do for class on November 10.


Jack Habib, "Population Aging and The Economy" pp.328-349

Bruce Jacobs, ("Aging and Politics"), pp.350-361

Toni Antonucci, "Social Supports and Social Relationships," pp. 205-227

XI. Mortality and Morbidity

Readings to do for class on November 17.


XII. Social Aspects of Aging
Readings to do for class on November 24. These are all chapters from: Judah Matras, *Dependency, Obligations and Entitlements* (Prentice Hall, 1990?).
