GRADUATE SCHOOL OF INTERNATIONAL STUDIES
SEOUL NATIONAL UNIVERSITY
Fall 2025

INTERNATIONAL DEVELOPMENT SEMINAR 1: ECONOMIC PROGRESS IN DEMOGRAPHIC TRANSFORMATION

Time: Tuesday 14:00 - 17:00.
Place: 140-2 #201 for Offline or Zoom Online when necessary
Course Number: M3459.000500.
Instructor: Hyeok Jeong (Email: hyeokj@snu.ac.kr, Tel: 02-880-2921).
Office Hour: Tuesday 17:00 - 17:50 with appointment.

Last Update: July 26, 2025.

Course Keywords

Population Crisis, Fundamental Demographic Transformation, De-population Economy, Low Fertility, Aging, Local Extinction, Spatial Economy, Human Capital, Innovation, Economic Growth, Economic Progress.

Course Description

This course aims to understand the possible paths of sustained economic growth and progress in the era of population crisis, which is characterized by (i) de-population and shrinking economy, (ii) compositional imbalance between generations, and (iii) asymmetric extinction of regional economies. The population crisis together with the climate crisis are the two most fundamental challenges to the sustainable development of human society. A common feature of these two crises is that both are about collective suicide from disconnection: climate crisis is caused by the disconnection of humans from nature and population crisis is caused by the disconnection between generations.

More than half of the countries in the world are categorized as “low-fertility society” where the total fertility rate is below the replacement rate so that the population is expected to decline soon or already started to decline, which may last indefinitely. Human society never experienced this kind of long-term and systemic de-population. Many critical socio-economic institutions and policies were designed

under the implicit but solid assumption that population growth rate is positive. Furthermore, in most economic growth theories, the long-term equilibrium of positive growth is built on the assumption of positive population growth (based on the historical experience) so that we have very thin understanding what will happen to economic growth when population shrinks. Perhaps we are not ready for this process of fundamental transformation of demography, the logical converging point of which is likely to be an extinction of human race, in terms of policy responses and also in terms of theoretical imaginations.

This course explores the following issues: (i) what will happen to economic structure during the process of the above fundamental demographic transformation (FDT) under the on-going trend of demographic transition, (ii) whether the economic growth is possible in the de-population economy, if so under what conditions, (iii) what kinds of institutional and policy reforms can be response measures for *adaptation* to and *mitigation* of the consequences of the population crisis.

This class consists of four parts of lectures and student presentation sessions for policy proposals. First, we perform the basic empirical diagnosis about the demographic transition of the world, highlighting the implications of such demographic transformation in the extreme case of Korea. Second, we learn basic and advanced economic growth models which include population growth as an exogenous parameter or as an endogenous variable. Third, we will seek policy implications of such models in designing adaptation and mitigation policy measures to population crisis. Fourth, we study the empirical analysis about the determination of fertility and local extinction in the literature. Fifth, students need to propose their own policy measures to either adapt or mitigate the population crisis based on learnings from the lectures.

Evaluation

Course grade will be based on (i) Homework (30%) (ii) class presentation (20%), (iii) final policy report (30%), and (iv) class participation (20%). Class participation grade will be measured by (i) attendance (10%), and (ii) the quality of student's

answers and questions that are considered to significantly contribute to the class (10%). For the online class meetings, every student needs to turn on camera so that the TA can monitor the class participation. The student whose camera is off will be counted as absence.

Keeping class etiquette is required. If meeting off line, no cell phones including text messaging is allowed. If meeting online, non-class activities such as eating, sleeping, or talking on the phone are not permitted. For any negative disruptions to class, negative participation grade will be given.

This course does not allow alternative dates of exams, presentation, and submission of final report except for student's own health reason, which needs to be proved by official medical documents provided by non-family member doctors. For any cheating behavior, students will fail the course without exception.

According to the revised SNU school rule (the 4th Clause of the Article 85), effective date of September 1st in the year 2018, any students who attend less than two-thirds of the required classes will receive a grade of "F "or "U" with exception of inevitable cases which is upon discretion of the instructor. Any students who fulfill less than two-thirds of the evaluation requirement of this class will receive a grade of "F" without exception.

Instruction for Online Class

For any necessary contingencies, we may do the lectures, presentations and discussions via Zoom if needed. The URL of the login site of Zoom is https://zoom.us. You can create the login ID for Zoom by using your SNU email ID or by obtaining license from the IT Center (phone: 02-880-8282, email: zoom_tf@snu.ac.kr). The Zoom meeting ID and password for this class will be informed to the registered students by emails from TA. Class materials (reading assignments, presentation files and schedules) and the announcement of the class logistics will be posted on SNU eTL.

Course Outline

Part I. Factual Scenery of Fundamental Transformation of Demography

1. Fertility Changes
2. Aging
3. Intergenerational Imbalance
4. Local Extinction

Part II. Theoretical Relationship Between Economic Growth and Population Growth

5. Basic Neoclassical Growth Model
6. Lucas Human Capital Growth Model
7. Romer Endogenous Technical Change Model
8. Becker Endogenous Fertility Model
9. Jones Endogenous Growth Model with Negative Population Growth

Part III. Empirical Analysis of Fertility and Local Extinction

10. Determinants of Fertility Choice
11. Determinants of Regional Migration
12. Implications of Local Extinction for Aggregate Economy

Part VI. Presentations with Policy Applications for Adapting or Mitigating Population Crisis

Remark 1. When the time constraints prevail, we may rearrange the above topics.

Remark 2. We may make adjustment to the above course outline during the semester when any necessary contingencies happen.