

Midterm 2 Material (ECON 560)

General guidelines:

- This is a closed notes and closed books exam, and no calculators are allowed.
- The questions are based on (a) posted notes, (b) material and examples covered in class and (c) homework assignments.

Detailed guidelines:

1. Population and Growth

- a. Malthusian model
- b. Demographics:
 - i. Life expectancy
 - ii. TFR - Total Fertility Rate
 - iii. NRR - Net Reproduction Rate
 - iv. Predicting future population based on given age specific mortality and fertility rates.

2. Human Capital

- a. Human capital in the form of health
- b. Human capital in the form of education
 - i. Estimating the human capital in the form of education, based on given relative wages.
 - ii. Accounting for cross-country income differences using the production function with human capital
 - iii. Accounting for cross-country income differences using the Solow model and the production function with human capital.
 - iv. Splitting the total labor income in a country into (a) payments to raw labor and (b) payments to human capital.

3. Growth Accounting

4. Technology

- a. Properties of new ideas: (1) Non-rivalry, (2) non-excludability.
- b. Determinants of R & D.
- c. Models of innovation and growth (we explicitly model the production of new technology)
 - i. One-country model of innovation and growth
 - ii. Two-country (or many countries) model of innovation and growth (with leader and follower).

General remarks: there are three types of questions that I can ask: (1) graph questions, where I ask to draw graphs or answer a question based on a given graph, (2) verbal questions, where the answer verbal, and (3) math questions, where I ask to derive some equation or formula and use them.