UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

# COURSE SYLLABUS

# Demography

**2425-1-E4102B066**

## Learning objectives

The course aims at providing the knowledge to analyse qualitative and quantitative changes in a population and at identifying the determinants of these changes. The course focuses on the demographic and projection methods both at the individual and family level. The students will acquire the skills to search and use demographic data, to analyse and show demographic topics.

The course provides students with the knowledge and the skills to evaluate demographic dynamics, population change and the effects on the socio-economic and political-cultural equilibrium.

Students will acquire the tools for a critical analysis of demographic issues and their evolutions.

Knowledge and understanding.
This course allows students to acquire knowledge and understanding as follows:

- analyse qualitative and quantitative changes in a population
- definition of future demographic scenarios

Applying knowledge and understanding.
At the end of the course, students will acquire the tools to:

- write demographic report
- analyse critically the demographic evolution
- evaluate demographic dynamics, population change and the effects on the socio-economic and political-cultural equilibrium

## Contents

1. Introduction
2. Demographic data
3. Structure and size of a population
4. Growth rates in demography
5. Analysis of demographic events
6. Population projections

## Detailed program

1. Introduction

2. Demographic data:
   a. national and international

3. Growth rates in Demography
   a. Arithmetic
   b. Geometric
   c. Continuous
   d. Doubling time
   e. Practice lab

4. Age and sex Structure :

a. Population pyramid
b. Population age structure indicators (ageing index, age dependency ratio)
c. Population gender structure indicators (sex ratio, gender composition )
d. Demographic trend
e. Practice lab:

5. Analysis of demographic events:
   a. Age-specific rates and crude rates
   b. Comparison between demographic rates.
   c. Lexis diagram, age last birthday, person-years lived, rates and probabilities)

6. Analysis of demographic events: mortality
   a. infant mortality
   b. mortality rates and probabilities
   c. life table
   d. demogrphic trends
   e. practice lab

7. Analysis of demographic events: Fertility
   a. fertility and fecundity
   b. intensity (rates and TFR)
   c. calendar (mean age at birth)
   d. birth order
   e. demographic trends
   f. practice lab

8. Demographic Transition
   a. phases

b. history of the world population

9. Analysis of demographic events: Migration
   a. internal and international
   b. intensity
   c. characteristics of migrants
   d. demographic trends
   e. Practice lab

10. Population projections
    a. Analytic (age and sex) method
    b. Selection of hypotheses
    c. Italian demogrphic projections ISTAT
    d. Practice lab

11. Analysis of demographic events: family formation and dissolution, households

## Prerequisites

None.

## Teaching methods

All lectures will be delivered in face-to-face mode.
Lectures, exercises and practice labs. The lectures provide both theoretical issues and in-depth focus on current demographic dynamics. The exercises aim at showing the procedures of calculus for the main demographic indexes, rates and probabilities and at interpreting the results. The practice labs allow students to use real data to prepare a report on the demographic condition of a selected municipality.
If computer labs are not available, the lab hours will be delivered remotely.

## Assessment methods

Written examination

The written examination consists of practical exercises and theoretical open questions on the topics covered in the lecture. This examination is aimed at testing the ability to process statistical data, the construction of demographic indicators and knowledge of the main methods of demographic analysis.

Students are given the opportunity to write a report on the demographic situation of the analysed municipality during the workshop hours. The report on the municipality assesses the student's ability to analyse and interpret real data and write a scientific report. This test will form an integral part of the assessment. The final grade will be obtained as a weighted average of the grades obtained in the lab report (0.25) and the written paper (0.75).
For those who do not submit the report, the evaluation will be based solely on the written test in which they will have to demonstrate their ability to comment on the calculated indicators (not required of those who submit the report)..

The exam will take place at the end of the course. Considered the material available to students, the exam will be the same for all the students regardless if they attended or not the course.

## Textbooks and Reading Materials

Blangiardo G. C. (1997), Elementi di Demografia, Il Mulino, Bologna. (ristampa 2006).

Suggested reading:
Associazione Italiana di Studi di Popolazione (2021). Rapporto sulla popolazione. L'Italia e le sfide della demografia. Il Mulino.
Billari F. (2023). Domani è oggi. Costruire il futuro con le lenti della demografia. Egea

Additional readings or documents will be provided during the course on the e-learning website

## Semester

II semester, approximatively from the End of February to mid-June

## Teaching language

Italian.

## Sustainable Development Goals

GOOD HEALTH AND WELL-BEING | REDUCED INEQUALITIES