**COURSE OUTLINE: DEMOGRAPHIC METHODS**

**Instructor**: Alyson van Raalte

**Start date:** Nov. 1, 2021

**End date:** Nov. 5, 2021

**Location:** Online Course. Link tba.

**Course description**

This course covers the most commonly used demographic methods in studying fertility, mortality and migration with population-level data. Techniques covered in the course include age standardization, Lexis diagrams, life table construction, fertility and reproduction, single and multiple decrement processes, and decomposition techniques.

**Organization**

For each day, students will be provided with one ~30-minute pre-recorded video as well as a lab session / exercise set to be completed using the open-source R statistical program. It is expected that students spend up to 6 hours per day (including breaks) on the lab session / exercise set.

Additionally, we will have daily virtual live sessions (60-90 min) where we go over the solution to these exercises. The pre-recorded lectures and lab sessions / exercise sets will be made available at least 48 hours before the corresponding live session.

For the live sessions, the group will be split into three smaller groups (by time zone). The times for the individual groups are as follows:

Group A: 13:00 - 14:30 CET
Group B: 15:00 - 16:30 CET

The participants will be informed by e-mail to which group they are assigned.

**Course prerequisites**

Students are expected to have basic knowledge of R (including data handling, for-loops, and writing basic functions). Participants need a laptop or desktop computer with the latest versions of R and RStudio installed. Instructions on how to download and install R can be found in "A (very) short introduction to R" by Torfs and Brauer (2014):
https://cran.r-project.org/doc/contrib/Torfs+Brauer-Short-R-Intro.pdf.

If you don't have sufficient knowledge about R, you can use the following websites to familiarize yourself with the program:

https://r4ds.had.co.nz/
https://swirlstats.com
https://www.coursera.org/course/rprog

We will be using the tidyverse group of packages, specifically dplyr and ggplot2. If you have never used dplyr, please give yourself a couple of hours prior to starting the course to complete this: https://r4ds.had.co.nz/transform.html

**Examination**

There will be no final exam at the end of the course. Students will be graded based on attendance and active participation in all seminars.

**General readings**

Preston, Samuel H, Patrick Heuveline and Michel Guillot. (2001). Demography: Measuring and Modeling Population Processes. Oxford: Blackwell Publishers.