

## BB512 - Instructor Resources

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# This website and other course materials

This website contains resources for instructors in BB512.

**We may not do ALL of these exercises, but you are welcome to do ones we miss in your own time.**

## Software

We will use Excel and R/RStudio during this course.

### Excel

I expect you will already have Excel installed, so there is not much to say here.

Be aware that Excel differs depending on the language it is localised in. For example, Danish vs. English. This means that some of the commands might differ between version. See [here](#) for examples.

### R and RStudio

R and RStudio are two separate pieces of software. RStudio is a user-friendly interface to talk to R, it cannot work if you have not got R installed. So, when you install these two programs, install R first, then RStudio.

Already have them installed? I strongly recommend to update to the latest versions of R, which you can download [here](#) and RStudio Desktop, which you can find [here](#).



## **(PART) Evolution by Natural Selection**



# The Blind Watchmaker

Coming soon...





# Bug hunt camouflage (Netlogo)

Coming soon...



# **(PART) Population Growth Models**



# Geometric growth

Coming soon...



# Estimating Population Growth Rate

Coming soon...





# Stochastic population growth

Coming soon...



# Basic logistic population growth

Coming soon...



# Deeper into logistic growth

Coming soon...



# Life tables and survivorship types

Coming soon...





# Matrix population modelling

Coming soon...



# Pre- and Post-reproduction census

Coming soon...



# Life Table Response Experiments

Coming soon...



# How many eggs should a bird lay?

Coming soon...





# Trade-offs and the declining force of selection

Coming soon...



# **(PART) Population Genetics and Evolution**



# Hardy-Weinberg equilibrium

Coming soon...



# The Gene Pool Model

Coming soon...





# Neutral or Adaptive Evolution in Humans: What Drives Evolution of Our Traits?

Coming soon...



# Heritability from a linear regression

Coming soon...



# **(PART) Interactions Between Species and Community Structure**



# Lotka-Volterra competition

Coming soon...





# Lotka-Volterra predator-prey dynamics

Coming soon...



**(PART) Animal behaviour,  
altruism and sexual  
selection**



# Game theory: Hawks and doves

Coming soon...



## (PART) Appendix - extras





# Exponential growth in detail

Coming soon...



# The legend of Ambalapuzha

Coming soon...



# From population biology to fitness

Coming soon...

