# Bristol Infectious Disease Dynamics Modelling Course

[Build Status](https://travis-ci.org/bristolmathmodellers/biddmodellingcourse)

This package contains the practicals for the [BIDD](http://www.bristol.ac.uk/social-community-medicine/research/groups/bidd/) modelling short course at the University of Bristol. It also contains the functions required to run the practicals and solutions.

## Getting Started

* Download the package folder from <https://github.com/bristolmathmodellers/biddmodellingcourse/archive/master.zip> or use git clone, as follows, in the command line (not the R terminal).

git clone https://github.com/bristolmathmodellers/biddmodellingcourse.git

* Verify that you have a working installation of both [R](https://www.r-project.org/) and [Rstudio](https://www.rstudio.com/products/rstudio/download/#download), then navigate to the biddmodellingcourse folder and click on the biddmodellingcourse.Rproj project. This should open an instance of Rstudio.
* Install the BIDD modelling short course from github using the R terminal:

install.packages("devtools")  
devtools::install\_github("bristolmathmodellers/biddmodellingcourse")

* After installation is complete start the first [practical](https://bristolmathmodellers.github.io/biddmodellingcourse/articles/practical-one.html). For practicals that require coding, follow along interactively using the provided notebooks (available in the vignettes folder).
* Practical 2 makes use of [R notebooks](https://rmarkdown.rstudio.com/r_notebooks.html), these allow text and code to be intermingled in a single document. Code is highlighted and separated from the text using ```. To run the code in these chunks click on the green arrow in the right hand side of the chunk, or select the chunk and press enter. To run all code chunks above a given chunk press the grey arrow pointing downwards. The output from each code chunk will be displayed below the code chunk.

### Docker

This package was developed in a docker container based on the [tidyverse](https://hub.docker.com/r/rocker/tidyverse/) docker image. Docker containers are lightweight, stand-alone, executable packages of a piece of software that includes everything needed to run it (see [here](https://www.docker.com/what-container) for details). To run the docker image run (with an active docker daemon running):

docker run -d -p 8787:8787 --name biddmodellingcourse -e USER=biddmodellingcourse -e PASSWORD=biddmodellingcourse seabbs/biddmodellingcourse

The rstudio client can be found on port :8787 at your local machines ip. The default username:password is biddmodellingcourse:biddmodellingcourse, set the user with -e USER=username, and the password with - e PASSWORD=newpasswordhere. The default is to save the analysis files into the user directory.

To run a plain R terminal use:

docker run --rm -it --user biddmodellingcourse biddmodellingcourse /usr/bin/R

To run a plain bash session:

docker run --rm -it --user biddmodellingcourse biddmodellingcourse /bin/bash

To connect as root:

docker exec -ti -u root biddmodellingcourse bash