STAT40730 Data Programming with R (online)

Isabella Gollini

Introduction - September 2018

STAT40730: Data Programming with R (online)

Instructor:

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RForwards: https://forwards.github.io/

Content:

- In this module you will learn how to use the statistical software R to an advanced level.
- After this module you should be able to run and understand all of the R code required for more advanced statistics modules.

Lectures

- The module runs over the 12 weeks of semester 1:
  - Week 1 begins on Monday 10th September 2018
  - Week 12 begins on Monday 26th November 2018
- Please familiarise yourself with the UCD semester dates: https://www.ucd.ie/students/documents/termdates_2018_19.pdf

Module Structure and Material

- Each week there will be:
  - approximately 45 minutes of video lecture and screencast material, broken up into short videos of around 5-15 minutes in length.
  - a lab sheet to work through yourself, these are non-assessed.
- Assessment material.
- All the material will be posted in advance in the relevant folders on Blackboard.

Assessment

- The assessment is split into 2 main parts:
  - 70% Final examination: 2-hour lab exam end of semester
  - 30% Coursework
    - 20% 2 longer homework assignments, each worth 10%
    - 8% 4 small tests, each worth 2%, available on Blackboard
    - 2% R Markdown Task
- Late tests/assignments will not be accepted
- Where coursework is submitted late due to unanticipated exceptional or extenuating circumstances, follow procedures under the Policy on Late Submission of Coursework: http://www.ucd.ie/registry/academicsecretariat/docs/latesub_po.pdf

Assessment - Final examination

- 70% of your final grade comes from a 2-hour lab exam taken at the end of the module, in UCD.
- During the exam you are allowed to use your notes, the Blackboard system, the internet and any files you have stored on your computer.
- You are forbidden from using any communication software or any other electronic device. This includes, but is not limited to, phones, tablets, email software, Skype, Facebook, etc.

Assessment - Coursework - Assignments

- There will be 2 assignments, each worth 10%, which you will submit via Blackboard.
  - They will be issued at the start of weeks 2 and 7 and due on **Wednesday** of weeks 5 and 10, respectively.
  - You will get a bonus point if you use R Markdown. Assignments grades are capped at 10/10 each.
  - **Late assignments will score 0 (zero)**, unless a "Late Submission of Coursework" form is submitted.

Assessment - Coursework - Small tests

- There will be 4 small tests, each worth 2%, which will be available on Blackboard.
  - They will be issued at the start of weeks 1, 5, 7, and 10.
  - They will expire on **Wednesday** of weeks 3, 7, 9, and 12, respectively.
  - **If you don't answer the test on time you will score 0 (zero)**, unless a "Late Submission of Coursework" form is submitted.

Assessment - Coursework - R Markdown Task

- There will be a very simple R Markdown Task, worth 2%, which will be available on Blackboard.
  - It will be issued at the start of week 2, and due on **Wednesday** of week 4.
  - **Late submissions will score 0 (zero)**, unless a "Late Submission of Coursework" form is submitted.

Assessment - Coursework Schedule

Week	Dates	Assignment Issued	Assignement Due	% Final grade
1	10 - 16 Sept '18	MCQ 1		
2	17 - 23 Sept '18	Assignment 1 + R Markdown Task		
3	24 - 30 Sept '18		**Wed 26 Sept** - MCQ 1	2%
4	01 - 07 Oct '18		**Wed 03 Oct** - R Markdown Task	2%
5	08 - 14 Oct '18	MCQ 2	**Wed 10 Oct** - Assignment 1	10%
6	15 - 21 Oct '18			
7	22 - 28 Oct '18	MCQ 3 + Assignment 2	**Wed 24 Oct** - MCQ 2	2%
8	29 Oct - 04 Nov '18			
9	05 - 11 Nov '18		**Wed 07 Nov** - MCQ 3	2%
10	12 - 18 Nov '18	MCQ 4	**Wed 14 Nov** - Assignment 2	10%
11	19 - 25 Nov '18			
12	26 Nov - 02 Dec '18		**Wed 28 Nov** - MCQ 4	2%

Plagiarism

- Plagiarism is a serious academic offence. While plagiarism may be easy to commit unintentionally, it is defined by the act not the intention.
- The work you submit for this module must be your own.
- Make sure you are familiar with the UCD plagiarism policy: http://www.ucd.ie/governance/resources/policypage-plagiarismpolicy/
- Students caught plagiarising or making their answers available to others will be given **zero** for the continuous assessment part of this module.

Copyrights

All the material on Blackboard, including the lecture notes, the assignments and the videos are all available to download and **you must not share this material with anyone**.

Grading

- We will use the UCD School of Mathematics and Statistics grading scale: http://maths.ucd.ie/tl/grading/en02

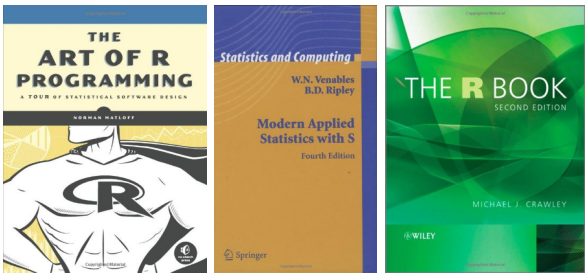
Queries

- If you have any **administrative** or **content based** queries, please use the relevant forum on the discussion board on Blackboard which can be found under the 'Discussions' link.
- If you are having **difficulties** or have a query of a **personal nature** please contact me at: isabella.gollini@ucd.ie

Disability Support Service

If you are registered with the Disability Support Service in UCD please let me know.

Important resources



Module content: what will we study?

1. Introduction to R.
2. Vectors, matrices and arrays.
3. Lists and data frames.
4. Graphics.
5. Factors and tables.
6. R programming structures.
7. Simple statistical programming.
8. Object-oriented programming.
9. Input/output and string manipulation.
10. Debugging code.
11. Performance enhancement and parallel R.
12. Advanced statistical programming.

- R Markdown https://rmarkdown.rstudio.com/

Take home messages

- **Work consistently** and keep in touch.
- Read and contribute to the discussion board.
- Get stuck in – learn by doing and making mistakes.
- Enjoy!