# [WEEK 1 ] Introducing the Module

## CS5701 - Quantitative Data Analysis

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# Welcome to QDA – House keeping rules

- I will start at 10:05 prompt
- The Lectures and Labs are being **recorded** - the recordings will be shared but it can take a few hours to make them available
- There will be time for questions during the sessions
- All the material for this module - CS5701 is and will be shared on BrightSpace in the dedicated module page.

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# Welcome to QDA – The Team

- Isabel Sassoon – (Module Leader)
- Sarath Dantu
- GTA team: Mohamed Anmar, Yu Cao, Matia Ghafourian , Ziyan Fu, Nchongmaje Ndipenoch and Namir Oues

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# Welcome to QDA – Isabel Sassoon – About me

- "Doing cool and helpful things with data"
- Statistician - Fellow of the RSS
- Research interests in design and evaluation of transparent and explainable data-driven automated reasoning (Artificial Intelligence), Health Informatics and Data science.
- See my website for more details https://www.brunel.ac.uk/people/isabel-sassoon and @isabelsassoon on twitter

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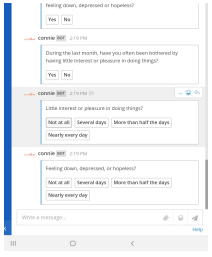
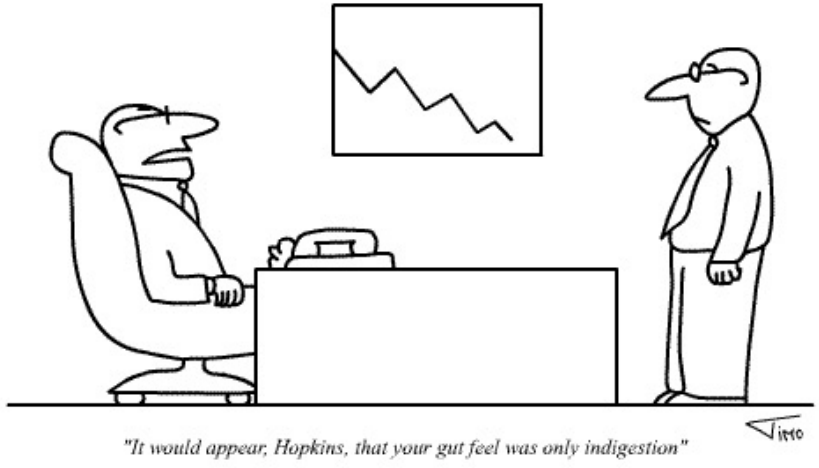
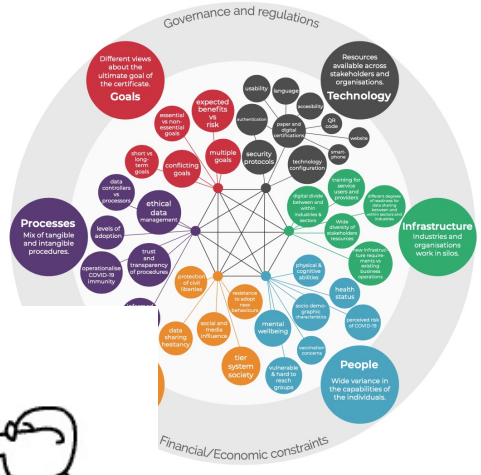
# Welcome to QDA – Isabel Sassoon – About me



"It would appear, Hopkins, that your gut feel was only indigestion"



# QDA - The weekly schedule

Each week you will have:

- A one-hour Lecture (Wednesday 10am – 11am) which you can attend in person in **LECT-F**
- A two-hour lab session (Wednesday 1pm – 3pm) which you can attend in person in **TOWA 407-408**.
- The lab is in 2 parts:
  - A guided lab session
  - Time for independent practice with a chance to ask us questions

Note: in week 1 the lab session will be a joined up session with Modern Data (CS5702).

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# QDA The weekly schedule (continued)

- During the second part of the Labs you will be provided with worksheets and data, in order to independently practice and apply the weeks' concepts
- We will be available to answer questions and support you
- We will share solutions to these the week following their release
- There will be scheduled on-line drop in sessions if you have questions on any of the material or the module or just to say hello!
- On there is a discussion forum on Brightspace and you can always email me: isabel.sassoon@brunel.ac.uk

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# QDA The weekly schedule (continued)

For each week there will be this information shared on the Brightspace module page:

- Suggested pre-reading material - for you to familiarise yourself before the lecture
- The Lecture slides
- Additional material to provide more depth in certain areas - this is available for those wanting more information
- The code and data for the lecture and labs (if applicable)
- The independent worksheet for you to work through in the second part of the lab
- Independent worksheet solutions from the previous week

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# QDA The weekly schedule (continued)

- During the lectures there will be some polls for you to interact with - go to PollEv.com/isabelsassoon
- At times during the module there may be some surveys shared - if you have not already can you please fill this in: https://forms.office.com/r/FsWX2xSgmL

# QDA Learning Outcomes

- LO1: Develop understanding of statistical data analysis methods and their relevant use in data science application and research.
- LO2: Learn to critically evaluate the strengths and the weaknesses of statistical data analysis methods alongside an understanding of how and when to use or combine methods.

For more details on the module head to the Module Page on Brightspace where you will find a copy of the study guide.

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# QDA - Module Overview

*"The numbers have no way of speaking for themselves. We speak or them. We imbue them with meaning."*
– Nate Silver, The signal and the noise

In the module we will step through the following stages:

- Exploring one variable at a time
- Asking questions regarding one variable
- Exploring and modelling the relationship between variables

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# QDA Week by week

The lectures and labs have a weekly topic:

| Week | Date | Lecture Topic |
|---|---|---|
| 1 | 21/09/2022 | Exploratory Data Analysis (EDA) |
| 2 | 28/09/2022 | Inferential Statistics – Part 1 |
| 3 | 05/10/2022 | Inferential Statistics – Part 2 |
| 4 | 12/10/2022 | Linear Regression |
| 5 | 19/10/2022 | Analysis of Variance (ANOVA) |
| 6 | 26/10/2022 | Multiple Regression |
| 7 | 02/11/2022 | Generalised Linear Models (GLM) and Logistic Regression (LR) |
| 8 | 09/11/2022 | Count Data and Table Analysis |
| 9 | 16/11/2022 | QDA in the wild |
| 10 | 23/11/2022 | Revision Lecture |

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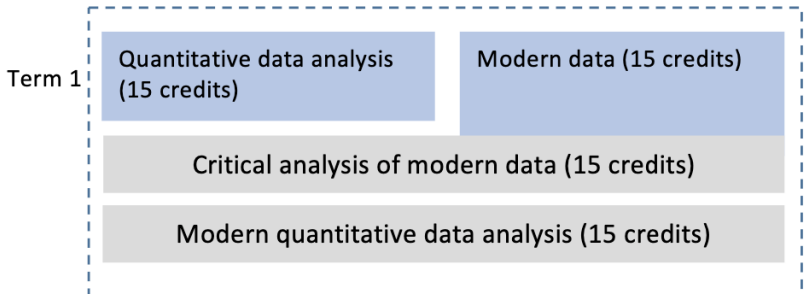
# QDA Labs

- We will be using R in Rstudio
- R is widely used for Statistics and Data Science
- R Studio and R are both open source and are available for Windows, Mac and Linux
- See the Week0 material on BBL module page for some worksheets to support installing R and R studio on Win and Mac
- You will have access to R and R studio on the lab PCs

# Assessment blocks vs teaching blocks

CS5701 is a teaching block which has an **integrated assessment blocks with CS5702 (Modern Data)**




You will have two assessments:

- coursework (CS5801)
- an exam (CS5802)

These will cover the material in CS5701 (this module) and CS702 (Modern Data). (Note: this is different for DTS)

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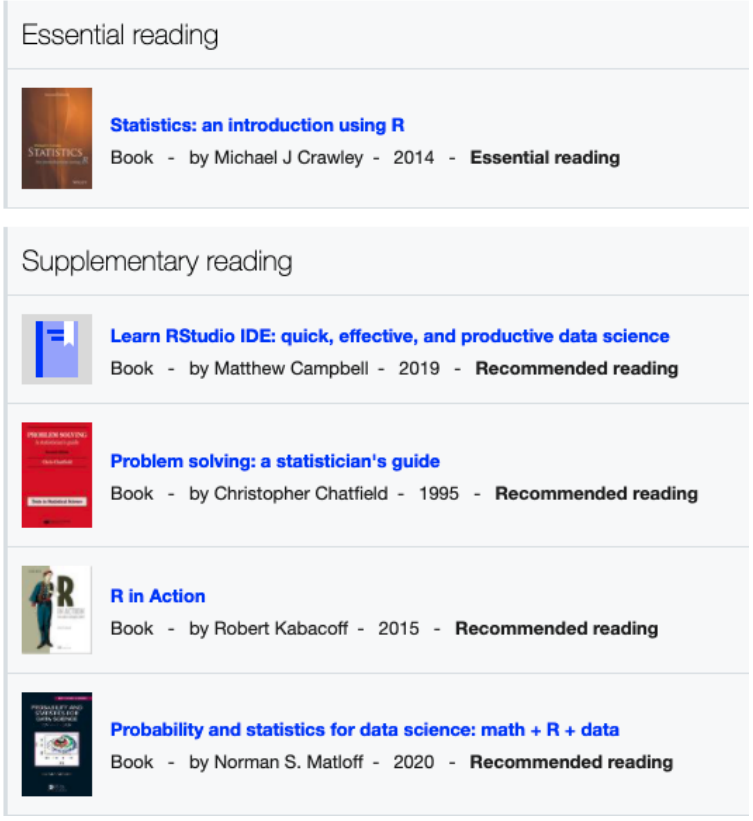
# QDA Reading list

The main text book is:

- Crawley, M.J., 2015. Statistics: an introduction using RJ Wiley, England.
- It is available (as all others) as digital downloads through the library



# Questions?

- We try to have time for questions but if we dont get to your question in the lecture
- Post it on the Brightspace discussion board
- ... or ask them during the second part of the lab session later today.
- We will answer them!!

We will now move to week 1 material for QDA ....

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