



NUS  
School of  
Computing

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# BT1101 Introduction to Business Analytics

## Lecture 1 - Course Briefing

*A/P Sharon Tan*

# Course Overview



fundamental concepts & tools needed to understand the emerging role of business analytics & data science applications in business and non-profit organisations



covers both the organisational and technical aspects of business analytics



how to apply basic business analytics tools (using R) to large real-life datasets in different contexts, and how to effectively use and interpret analytic models and results for making better and more well-informed business decisions



Provides broad overview of how and why business analytics can be implemented in organization, the various approaches and techniques that could be adopted under different organizational objectives and issues.

# Learning outcomes

01

Understand the conceptual foundations of three aspects of business analytics, namely descriptive, predictive and prescriptive analytics

02

Understand the methodological foundations of analysis methods and techniques for business analytics

03

Be able to apply analytic techniques and methods on business-related data sets

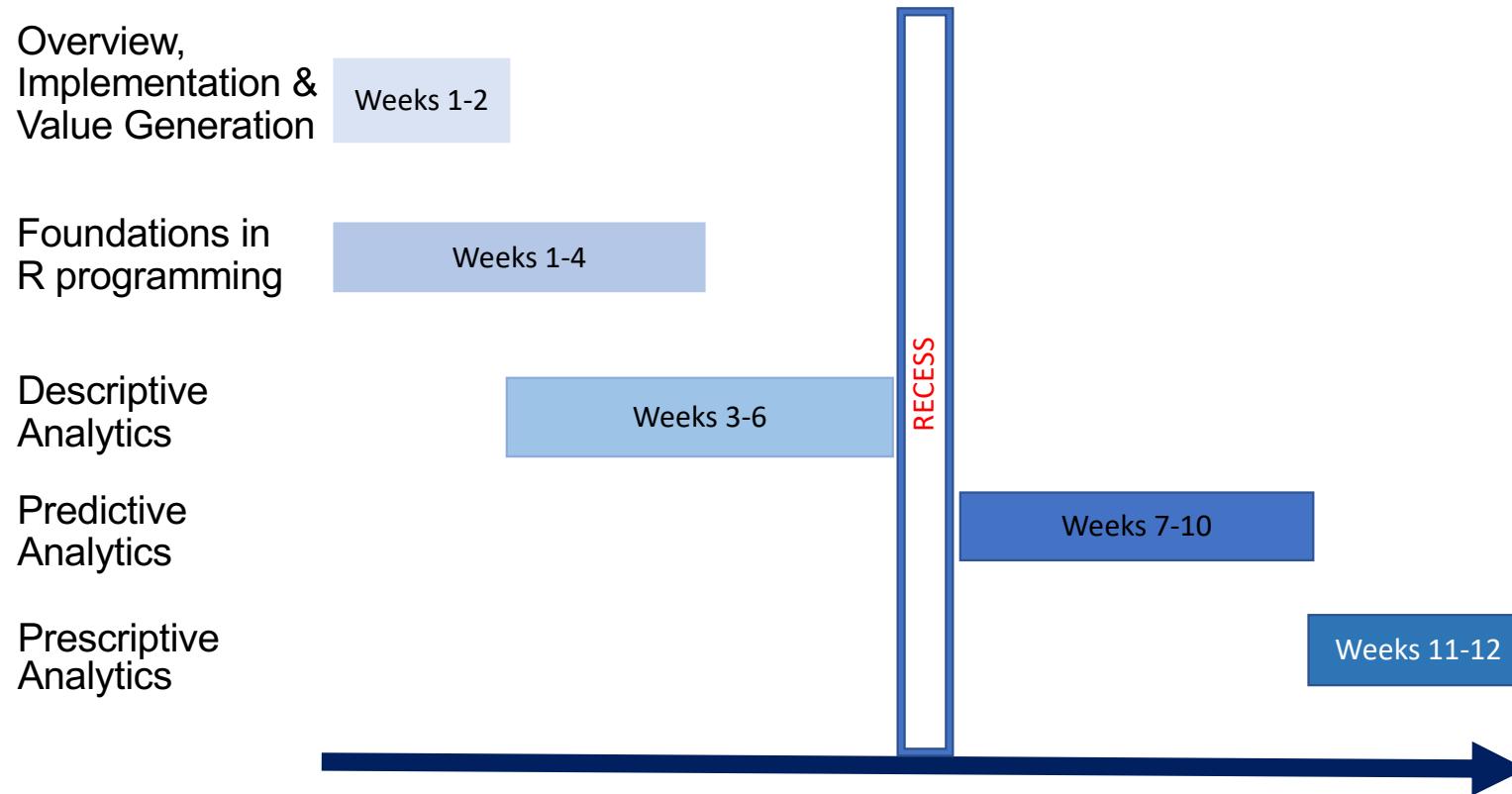
04

Master the basic foundation to using R for data manipulation and analyses

05

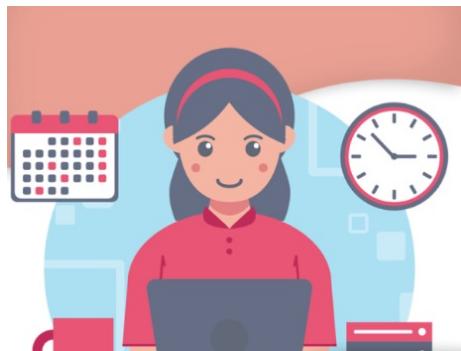
Understand how and why business analytics can be implemented in organizations, the various approaches and techniques that could be adopted for different organizational objectives and issues.

# Course Topics



# Course Format

- Blended mode (weeks 1-6)



Self-directed learning



Synchronous learning activities



Assignments/Assessments

# Course Format

- Blended mode (weeks 1-6)



- Online videos (pre-recorded)
- Online quiz (one or more topics assessed per quiz)
- Datacamp assignments – R practice

[Self-directed learning](#)

# Course Format

- Blended mode (weeks 1-6)



Synchronous learning activities

- Lectures (on campus):
  - Topic overview, use cases, hands-on practical demo
- Lab sessions (on campus)
  - From week 4, weekly small group hands-on problem solving of tutorial assignment (Part 1)
- Tutorial session (on campus)
  - From week 3
  - Review lecture concepts
  - Discuss tutorial assignment submitted question (Part 2)
- Coaching sessions (via Zoom)
  - from week 3
  - Small group (1-3 students) consultation
  - schedule will be posted on CANVAS by end of each week; sign up on need-to basis; at least 24hrs in advance

# Course Format



Other  
Assignments/Assessments

- Tutorial assignments
  - Part 1 to be done in lab and Part 2 for submission
- Online assessment
  - 1 hr in Week 10, 23 Mar 2023, 16:30-7:30
- Online final exam
  - 2.5 hrs, 27 Apr 2023, 13:00-15:30

Week	Online Asynchronous Self-learning activities*	Synchronous Learning Activities	Assessments
Week 1 9-13 Jan	Online video: Overview and Data for Business Analytics Due: 19/1, 4pm	Lecture 1 (12/1): <b>Course Briefing</b>	Read JE Chap 1; Online Quiz 1 Due: 19/1, 4pm
Week 2 16-20 Jan	Online video: Intro to R Datacamp assignment: 1) "Introduction to R" Due: 29/1, 11:59PM  Datacamp assignment: 2) "Transforming Data with dplyr", 3) "Aggregating Data", 4) "Selecting and Transforming Data" Due: 29/1, 11:59PM (Complete before your Lab in Week 4)	Lecture 2 (19/1): <b>Implementation &amp; Value Generation Workshop</b>	Tutorial 1 Assignment "Implementation & Value Generation" Part 2 Due 3/2, 9am
		No lecture (26/1) Tutorial (27/1): Implementation and Value Generation Tutorial Part 1	Tutorial 2 Assignment "Basics of R" Part 2 Due 10/2, 9am
Week 4 30 Jan-3 Feb	Online video: Data Visualizations Online video: Data Tabulations & Frequencies Due: 2/2, 4pm (Complete before lecture 3)  Datacamp assignment (optional): "Understanding Data Visualization" "Introduction to Data Visualization with ggplot2" Due: 30/6, 11.59pm	Lab 1 (30-31/1): Basics of R Tutorial Part 1 Lecture 3 (2/2): <b>Data exploration and visualization workshop</b> Tutorial (3/2): "Implementation & Value Generation" Tutorial Part 2	read JE Chap 3; Online Quiz 2 Due: 2/2, 4pm Tutorial 3 assignment "Data Exploration and Visualization" Part 2 Due 17/2, 9am
Week 5 6-10 Feb	Datacamp assignment: "Introduction to RMarkdown" Due: 5/2 11:59PM (Complete before your Lab in week 5)  Online video: Descriptive Analytics - Statistical Measures Online video: Descriptive Analytics - Probability Distributions and Data Modeling Due: 9/2, 4pm	Lab 2 (6/2-7/2): Data Exploration and Visualization with R Tutorial Part 1 Lecture 4 (9/2): <b>Statistical measures, probability distributions and data modeling workshop</b> Tutorial (10/2): Basics of R Tutorial Part 2	read JE Chap 4&5; Online Quiz 3&4 Due 9/2, 4pm Tutorial 4 assignment "Statistical Measures, Probability Distributions and Data Modeling" Part 2 Due 3/3, 9am
Week 6 13-17 Feb	Online video: Sampling and Estimation Online video: Hypotheses Testing Due: 16/2, 4pm	Lab (13-14/2): Statistical Measures, Probability Distributions and Data Modeling Tutorial Part 1 Lecture 5 (16/2): <b>Sampling, Estimation &amp; Statistical Inference workshop</b> Tutorial (17/2): Data Exploration and Visualization Tutorial Part 2	read JE chap 6&7; Online Quiz 5&6 Due 16/2, 4pm Tutorial 5 assignment "Sampling, Estimation and Statistical Inference" Part 2 Due 10/3, 9am
Recess 18-26 Feb	no classes	no classes	no classes
Week 7 27 Feb-3 Mar	NA	Lab (27-28/2): Sampling, Estimation and Statistical Inference Tutorial Part 1 Lecture 6 (2/3): Refer to Part 2 schedule Tutorial (3/3): "Statistical Measures, Probability Distributions and Data Modeling" Tutorial Part 2	Refer to Part 2 schedule
Week 8 6-10 Mar		Tutorial (10/3): Sampling, Estimation and Statistical Inference Tutorial Part 2	
	* All online self-learning activities are recommended to be completed in the order listed here. You may start anytime but should complete them by the due date so you have the background knowledge required to participate effectively in the synchronous activities.	#Lectures will be conducted online during lecture hours via Zoom; Labs and Tutorials will be conducted face-to-face; Coaching sessions will be via Zoom. Online Lectures/Workshops and in-class tutorials will be recorded and made available for review after the scheduled time.	Tutorial assignments are due by the start of the first tutorial class (Monday 9am) for the week when the solutions for submitted problems will be discussed.

# Datacamp

- [www.datacamp.com](http://www.datacamp.com)
- An email will be sent to you through your NUSNET account ([..@u.nus.edu](mailto:..@u.nus.edu)) with a unique link to join the **BT1101-AY2223S2** group
- If you already have a Datacamp account linked to this email address, then you will be added to the group automatically
- Use your name as registered with NUS so we can identify you
- Access to premium content available for 6 months

	<b>Introduction to R</b> Course	Organization	Active	Jan 29, 23:59 +08
	<b>Data Manipulation with dplyr</b> Transforming Data with dplyr Chapter	Organization	Active	Jan 30, 00:00 +08
	<b>Data Manipulation with dplyr</b> Aggregating Data Chapter	Organization	Active	Jan 30, 00:01 +08
	<b>Data Manipulation with dplyr</b> Selecting and Transforming Data Chapter	Organization	Active	Jan 30, 00:02 +08
	<b>Communicating with Data in the Tidyverse</b> Introduction to RMarkdown Chapter	Organization	Active	Feb 5, 23:59 +08
	<b>Communicating with Data in the Tidyverse</b> Customizing Your RMarkdown Report Chapter	Organization	Active	Jun 30, 23:59 +08
	<b>Introduction to Data Visualization with ggplot2</b> Course	Organization	Active	Jun 30, 23:59 +08
	<b>Understanding Data Visualization</b> Course	Organization	Active	Jun 30, 23:59 +08

Complete them in this order. Must be completed by deadline to receive credits.

Optional

# Course Website

CANVAS

Tips:

- Use Homepage (Click on respective week) to assess course lecture notes, online videos, tutorials assignments/slides, online quiz and other course documents
- Datacamp assignment must be assessed from Datacamp website (direct links to the actual assignment cannot be linked from CANVAS)
- Post course/tutorial related questions to forum page (<https://piazza.com/nus.edu.sg/spring2023/bt1101>) instead of emailing

LIVE Q&A   Drafts   self-intro   datacamp   r\_syntax   wk1\_intro   wk2\_valuegen   wk4\_datavis   wk5\_statsprob   wk6\_sampling&hyp   wk7\_regr   wk8\_logit&ts   wk9\_datamining   online-assessment   wk11\_optim1   wk12\_optim2   final

Download   Updated   Unresolved   Following   Ban User Console - Note History: No history yet

**New Post**   Search or add a post...

**Actions**

**REPLIED**

**Private** Search for Teammates! 1/9/23

**YESTERDAY**

**Installation and IDE** 11:46 AM Prof Sharon, Was wondering which IDE are we going for BT1101? I heard it's going to be R script, if it is, Do we have

**WEEK**

Instr. Welcome Note Mon Dear BT1101 Students, Welcome to Piazza! As we enter a new semester with blended learning in this course, we hope that

**Private** Introduce Piazza to your stu... Mon

**Private** Get familiar with Piazza Mon

**Private** Tips & Tricks for a successf... Mon

Welcome to Piazza! Mon Piazza is a Q&A platform designed to get you great answers from classmates and instructors. We've put together thi

**note @6** stop following 6 views Actions

## Welcome Note

Dear BT1101 Students,

Welcome to Piazza!

As we enter a new semester with blended learning for this course, we hope that using this online forum, Piazza, will provide you with more opportunities to interact with other students and with the teaching staff.

If you have any questions on the class material, either from lecture or tutorial, please post a question (and you can even do so anonymously if you don't want your classmates to see who you are).

And if you know the answer to a question, please offer an answer. Don't be shy! And don't worry about being wrong, the teaching staff can correct you! Either way, you will learn the material better by answering your classmates' questions.

The idea is that we can all benefit as a community, because everyone can learn from everyone else's questions and answers. In fact, if the teaching staff receives emails that ask a question that we think is of broader interest to the class, we will encourage you to instead post it on Piazza.

The first thing you can do is to write a post (and file it under the "self-intro" folder) giving a short introduction to yourself, as mentioned in the Course Briefing lecture. This will let you get to know one another, and also familiarize yourself with Piazza's functionalities.

Also, if you prefer to find a small group of peers to study together, you can use the "Search for Teammates!" functionality to find potential study mates.

We hope you have a productive semester ahead!

On behalf of the teaching team,  
- Prof Sharon Tan & Samantha Sow

wk1\_intro

Edit good note 0 Updated 3 days ago by Sharon Tan

**followup discussions, for lingering questions and comments**

Start a new followup discussion

Compose a new followup discussion

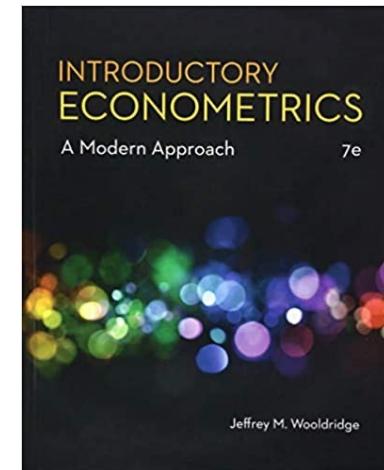
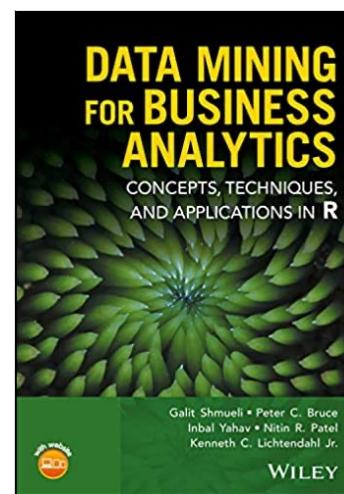
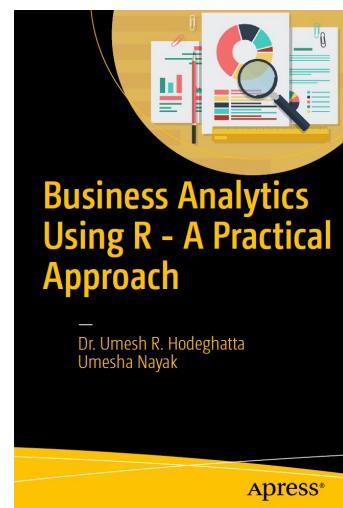
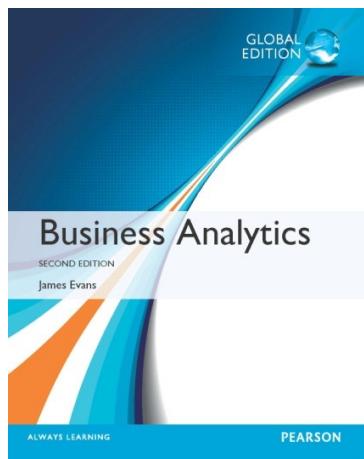
# Course Grade

Online Quiz & Datacamp Assignments	15%
Tutorial Assignments 1-9 (best 6)	24%
Lab Sessions	6%
Online Assessment	15%
Online Final Exam	40%
<b>Total</b>	<b>100%</b>

Focus on individual mastery of knowledge contents and tools  
Individual assignments must be done individually although group learning is encouraged.

Tutorials, Online quizzes and Datacamp assignments must be done  
by deadline for credits to be earned.

# Recommended References



- [JE] Business Analytics: Methods, Models, and Decisions: International Edition, 3/e, by James Evans, Pearson
- [UU] Business Analytics Using R - A Practical Approach
- Ebook can be downloaded from NUS library.
- [GS] Data Mining for Business Analytics: Concepts, Techniques, and Applications in R
- [JW] Introductory Econometrics: A Modern Approach; by Jeffrey M. Wooldridge.

# Course Lecturers



- **Sharon TAN (Dr.)**
- PhD (Carnegie Mellon University); MSc in Information Systems (NUS)
- Healthcare informatics & Analytics;
- [distans@nus.edu.sg](mailto:distans@nus.edu.sg)
- Office hrs: Mon 1:00-3:00pm (Wk2-7;  
wk7 onwards by appointment)



- **Samantha Sow**
- M.Ed. (University of Sheffield); BEng. (NUS)
- [sowjs@nus.edu.sg](mailto:sowjs@nus.edu.sg)
- Office hrs: Tue 1:00-3:00pm  
(Wk8-13)

# Tells us about your self (post on piazza – self introduction folder)

- Name; first, last, preferred; how to pronounce
- Degree program / year
- What you hope to gain out of this module
- Relevant interests / working experiences (e.g., internship)
- What makes you interesting / unique?
- Photo of yourself

**THE END!**

*Thank You!*