



COURSE INFORMATION

WQD7001 :

PRINCIPLES OF

DATA SCIENCE

Agenda



**LECTURER'S
INFORMATION**



**COURSE
OVERVIEW**



**COURSE
REQUIREMENTS**



FIRST LECTURE

LECTURER'S INFORMATION

- **Group 1**

- Dr. Rohana Mahmud
- rohanamahmud@um.edu.my
- 03-79676341



- **Group 2**

- AP Dr. Norisma Idris (norisma@um.edu.my)
- 03-796763001



Course Description

A graduate-level (Master of Data Science) core course.

See → Course Pro Forma

Course Pre-requisite : None.

First course in MDS program



See Course Pro
Forma &
Current Course
Information on
SPECTRUM

TOPICS For EACH CLO

CLO1	Topics
WEEK 1	Course Introduction
	Data Science: An Overview
WEEK 2	Big Data and Data Drivenness
WEEK 3	Data Scientist - Think Like a Data Scientist
	Ethics in Data Science
WEEK 4	Asking Questions
	Finding and Getting Data

CLO2	Topics
WEEK 5	Data Preparation
	Cleaning Data
	Transforming Data
WEEK 6	Exploratory Data Analysis (EDA)
WEEK 7	Reproducible Research (RR)
WEEK 8	Data Products

CLO3	Topics
WEEK 9	Statistical Learning
	Regression Modelling
WEEK 10	Machine Learning
WEEK 11	Unstructured Data Processing
WEEK 12	Data Storytelling

BLOOM's TAXONOMY

A model used to classify educational learning objectives into levels of complexity & specificity.



Surface learning vs Deep learning

FOR REMOTE LEARNING STUDENTS

How to Access Office365

For Students

- Please visit <https://login.microsoftonline.com>
- Sign in to your account
- Login ID – username@siswa365.um.edu.my, password
- Whereby username and password are username & password of SISWAMAIL



ASSESSMENTS

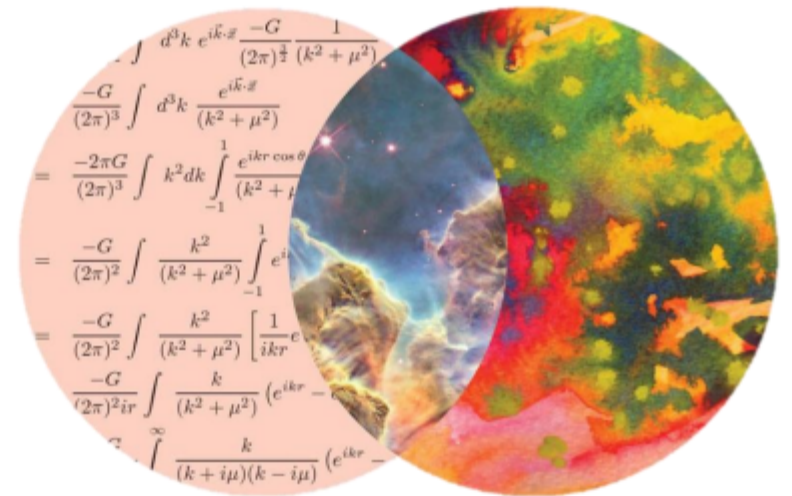
- **Continuous Evaluation – 60%**
 - **Mid-Term Examination = 20**
 - **Group Projects = 40**
- **Final Examination – 40%**
 - **Alternative Assessment 1 (AA1) = 20%**
 - **Alternative Assessment 2 (AA2) = 20%**

Why Study Data Science?

1. The **demand** for data scientists is **huge**, the number is said to be much higher than the available candidates.
2. Being a Data Scientist is one of the hottest and **trending career** option of the decade.
3. Data Science graduates are **asset** to companies of all types.
4. ComputerWorld lists Data Scientist as the top professional profile in their **Top 10 jobs** in IT and Engineering.
5. Big data boom has also meant that there are all sorts of new opportunities cropping up for talented employees. **Analytics is everywhere**.
6. Perfect opportunity to become a well-paid **freelancer** or **consultant** for some of the biggest firms in the world.
7. There is a significant number of careers open to those trained in the area of data science.

The Science & [Art] of Data Science

- **Discovering** what we don't know from data.
- **Obtaining** predictive, actionable insight from data
- **Creating** Data Products that have business impact now.
- **Communicating** relevant business stories from data.
- Building **confidence** in decisions that drive business value.



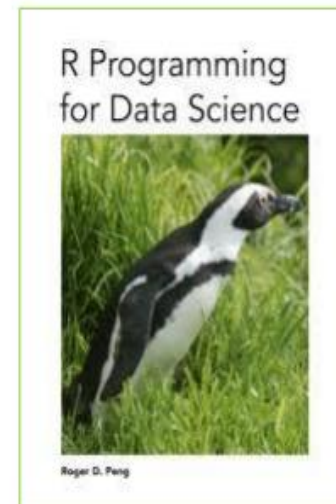
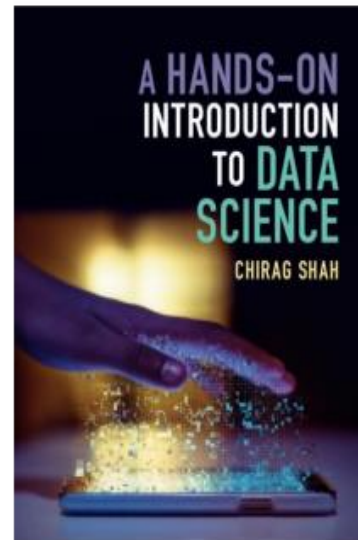
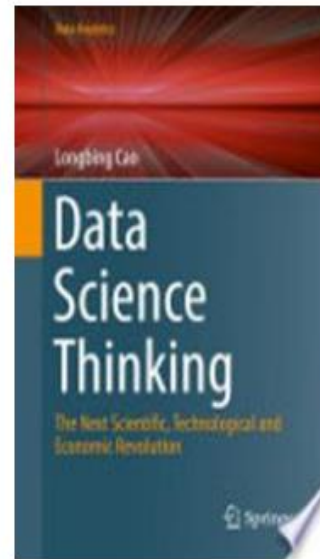
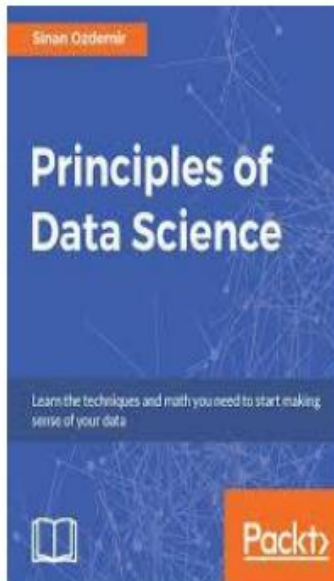
Course Goal

The **goal** of this course is to develop your skills in:

- **Exposing** you to methods and techniques for analyzing and understanding data.
- **Data wrangling**: how to acquire, clean, reshape, or sample data so that it's ready for further processing?
- **Data exploration and analysis**: how to analyze the signal in a large, noisy dataset?
- **Prediction**: can inferences and decisions be made based on the available data?
- **Communication**: how can findings be effectively communicated to others?

Text book

- There is **NO** single text book, and readings will be posted lecture by lecture.
- However, there are a couple of books that are particularly useful, and we will reference them repeatedly:





Recorded lectures will be
uploaded on Teams

WQD7001 Course Site >>> spectrum.um.edu.my

You will find on **Spectrum course related
information:**

- ☐ Announcements
- ☐ Course Pro Forma
- ☐ Course Current Information
- ☐ Class Schedule
- ☐ Lecture Slides & Notes
- ☐ Coursework Details
- ☐ Assignments Submission
- ☐ Discussion Forum

Attendance

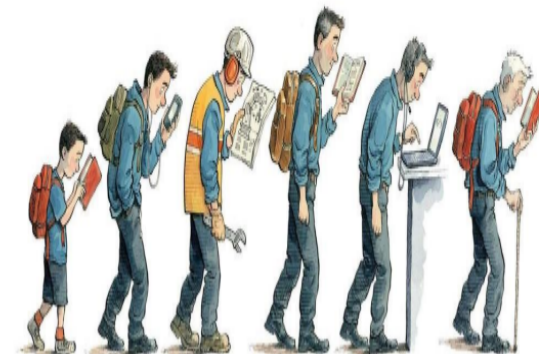


- **Important**
- Adopt the **habit of punctuality.**
- Knowing **what** content **was scheduled** to be covered in class is not the same as knowing **what happened!**
- **Not everything** will be placed on slides!!!
- Avoid **procrastination.**
- **MUST** record attendance using QR code on SPECTRUM.

Readings



- E-Book
- Articles on Data Science
- Case Studies
- Handouts
- Links on slides
- Own related materials



Lifelong Learning

Communication Channel

Class WhatsApp Group based on your grouping please be sure that you are in the right WA group.

The link to join this group will be provided by the lecturer.



GROUP 1
WQD7001



GROUP 2
WQD7001

QR CODE ATTENDANCE



12-10-2020 05:45PM - 09:00PM

You must record your attendance on Spectrum every week during the class hours (when? from 5:50 – 9:00 pm).

- ☐ Get UMTouch apps
- ☐ Then scan the QR code available weekly on Spectrum or
- ☐ Click on 🐸 Attendance



Readings & Tutorials

Readings & To Do

- ✓ Reference Books
- ✓ Handouts
- ✓ Links placed on Slides
- ✓ Beyond slides
- ✓ Watch videos
- ✓ Listen to TED Talks



Tutorials / Labs provides you the opportunity to actively engage with the course content and develop your ability to think for yourself.



MARKING SCHEME AND GRADE POINT AVERAGE

The assessment for the examination of the coursework component is based on the following marking scheme:

MARKS	GRADE	GRADE POINT	MEANING
90-100	A+	4.00	HIGH DISTINCTION
80-89	A	4.00	DISTINCTION
75-79	A-	3.70	
70-74	B+	3.30	PASS
65-69	B	3.00	
60-64	B-	2.70	FAIL
55-59	C+	2.30	
50-54	C	2.00	
45-49	C-	1.70	
40-44	D+	1.50	
35-39	D	1.00	
0-34	F	0.00	

DISCLAIMER



This is **NOT** a programming course.
Do not expect that the instructor is
going to coach you on coding.



Examples of R code is presented
to enhance the practicality
aspect in order to support the
concepts being taught.

What Type of Procrastinator Are You?

DAREDEVIL

You like to live dangerously, only starting work when the deadline is looming.

You think you show grace under pressure, but the end result is rushed work that's full of errors.



TIPS

Get organised

Set yourself tighter deadlines and use the adrenaline rush productively while managing your team - self-regulate with penalties for not meeting these targets.

SELF-SABOTEUR

You're your own worst enemy, putting obstacles in your path to stop yourself working.

That way, you can say it's not your fault - rewarding yourself for a job left undone.



TIPS

Plan for obstacles

List potential obstacles to getting things done ahead of time, and plan countermeasures, e.g., "Whenever I check Facebook, I take a short break."

OSTRICH

You like to stick your head in the sand and ignore the tasks at hand - avoiding having to make decisions.

If you don't make a decision, then you don't risk failing or being judged.



TIPS

Self-talk confidently

Notice how you are talking to yourself when procrastinating. Think positively - instead of "I can't", say "I will".

CHICKEN

With so many choices, how are you supposed to decide? By the time you've made up your mind, it's too late.

You feel like you may as well put it off and let someone else choose.



TIPS

Swiss-cheese the big tasks

Handle the biggest tasks first by breaking them down into smaller manageable ones. Devote small amounts of time and achieve as much as you can in each to boost your momentum.

PERFECTIONIST

You'll settle for nothing less than perfection - which is essentially impossible.

You're ruled by what others think of you, delaying work until you can be sure other people won't criticise it.



TIPS

Keep it real

Set yourself reasonable targets that you know you can manage and do your best to meet them. Perfection is impossible, but you can learn from mistakes.

Whatever type of procrastinator you are, all of these tips can help you conquer your fears and get back to work. So stop making excuses and go for it - you'll surprise yourself with what you can achieve.

REMINDERS

- One of the **BIGGEST** turn offs for any lecturer is late students.
- Be **PUNCTUAL** please.
- Avoid academic dishonesty. So never cheat.
- Understand the meaning of **PLAGARISM**.

<http://www.plagiarism.org/plagiarism-101/what-is-plagiarism/>

- Work hard and study smart.
- Avoid procrastination.
- Learn to reflect.

<https://www.plymouth.ac.uk/uploads/production/document/path/1/1717/Reflection.pdf>

Work to do.



Time to do.



What we do !



