Introduction to Data and Business Analytics

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Let's Get Organized

- *e-Dimension*

- *The teaching team:*
    - *Ying Xu, xu_ying@sutd.edu.sg*
    - *Douglas Rolph, douglas_rolph@sutd.edu.sg*
    - *(Guest lecturer) Peter Jackson, peter_jackson@sutd.edu.sg*
    - *(TA) Shuqin Gao, shuqin_gao@mymail.sutd.edu.sg*

Course Grade Breakdown

Assessment Items	Percentage	Period
Class participation/ Seminar attendance	8%	Throughout the term
Homework	12%	Throughout the term
Mid-term	20%	Week 8
Group Project (1D Industry-sponsored)	40%	Week 13
Final Exam	20%	Week 14

Industrial Leaders Seminar

- **Interact with leaders in industry**
  - *Start your corporate networking*
- **Attend *4 out of 5* seminars**
  - *Attendance is recorded by the student leader*
  - *Make sure the student leader gets your signature on the attendance form*
  - *TA would come and check attendance randomly*
- *5:45 p.m. – 6:15 p.m.*
  - *Refreshments*
  - *Talk casually with speaker*
- *6:15 p.m.- 7:15 p.m.*
  - *Seminar with Q&A*

Industrial Projects

Project ID	Project Description	Company Name	SUTD Adviser
Cohort 1			
1	Sensitivity Analysis for Cold Room Conveyor Systems	RedMart	Shuqin
2	Full Auto Decision (FAD) Rate at Final Test Process	Infineon Technologies Asia Pacific Pte. Ltd.	Peter
3	Information Extraction and Trend Analysis from News Feeds	Infineon Technologies Asia Pacific Pte. Ltd.	Doug
4	User Profiling Analytics	Streetsine Technology Group	Doug
5	Analysis and Time Series Forecasting of Singapore Home Prices and Values	Streetsine Technology Group	Doug
6	Business Performance Reporting Dashboard	Streetsine Technology Group	Doug
7	SOC Patient Flow Module in Hospital Dashboard (TTSH)	Tan Tock Seng Hospital (TTSH)	Shuqin
8	Part Repair or Replacement Decision Optimisation	SIA Engineering	Ying
9	Manpower Clustering	SIA Engineering	Ying
10	Understanding the Transshipment Trade (PSA)	PSA Corporation Ltd	Ying
11	Car Reservation Cancellation Impact for Weekdays and Weekends	Car Club Pte. Ltd.	Shuqin
12	Usage Hours Distribution for Weekdays and Weekends	Car Club Pte. Ltd.	Shuqin
13	Investment Insights with NLP	GIC Pte. Ltd.	Doug
14	Corporate Business Travel Data Analytics	GIC Pte. Ltd.	Doug
Cohort 2			
15	Understanding Subscriber Usage Patterns in the Indonesia Ecommerce Lanscape	Niometrics Pte. Ltd.	Peter
16	Understanding Rider and Driver Usage Patterns in Indonesian Ride Hailing Landscape	Niometrics Pte. Ltd.	Peter
17	Financial Dashboard	Commstech Pte. Ltd.	Doug
18	Reduce Travel Distance and Re-palletisation Effort (Bollore)	Bollore Logistics Singapore Pte Ltd	Ying
19	Continuous Improvement Project - Inventory Storage (Bollore)	Bollore Logistics Singapore Pte Ltd	Ying
20	Enhancing International Visitor Arrival Forecast Models	Singapore Tourism Board	Shuqin
21	Understanding the Impact of Airbnb on Singapore Hotels	Singapore Tourism Board	Shuqin
22	Enhancing the Hotel Room Demand Forecast Model	Singapore Tourism Board	Shuqin
23	Analyse the Supply Chain for Food Distribution in Singapore	VersaFleet	Peter
24	Analyse Transportation in Singapore	VersaFleet	Peter
25	Freshness Policy and Its Impact on Lost Sales and Wastage in Supermarkets	IDSC	Peter
26	Stocking Policy and Its Impact on Revenue and Profits in Department Stores	IDSC	Peter
27	Analyse the Effectiveness of the Daily Route Management	OPS	Ying
28	Analysis of the Purchasing Patterns of Customers	OPS	Ying

Industrial Projects

- ***Project teams assignment***

Project Grading (No Easy A's)

- **Project counts 40% toward final grade**
  - *Two presentations*
  - *Written report*
  - *Poster (December 5)*
    - *Submit for corporate approval Nov. 14!!*
  - *Peer evaluations used in grade*

- **Bonus points possible for exceptional projects**
  - *Conducted in professional manner*
    - *Well-organized meetings, lead-time management*
  - *Reveal unusual depth in analysis, excellent visuals*
  - *Employ concise, persuasive arguments*
  - *Result in client delight*

Work backwards from Nov. 14

Peer Evaluations

A.   Overall Contribution:

   Is this individual a critical reason for your team's success?

B. Level of Effort:

   Did this individual carry a fair share of the workload?

C. Contribution to Reports:

   Was this individual an important contributor in preparing text and graphics for presentation?

D. Effectiveness as a Team Member:

   Did this individual attend meetings, participate in discussions, cooperate with team strategies, and coordinate their activities with you? Was it pleasant to work with this individual?

E. Leadership:

   Did this individual initiate discussion, generate enthusiasm, build a consensus, and organize your efforts?

Before Your First Client Meeting (Kickoff)

- **Every student in the team should**
  - **Sign SUTD Undertaking Agreement**
  - **Read and sign NDA (2 copies: SUTD+Client)**
    - **For NDA with multiple pages put your initials at the bottom of each page**

- **Meet as team before meeting client**
  - **Appoint scribe(s): Take lots of notes during meeting**
  - **Appoint liaison for client / advisor**
    - **For client: Capture business cards, contact information**
    - **For advisor: Collect student e-mail addresses, schedule regular meeting, publish agendas and action items**
  - **Appoint report coordinator**
    - **Mock-up final report, fill in sections on Company Background, Problem Statement, Glossary, Appendices , Table of Contents**
  - **Team leader**

Arrange Kickoff Meeting

- *The team leader or liaison for client would arrange the kickoff meeting under the help of your advisor*

- *Copy the advisor when sending the email request for kickoff meeting*

- *Before send the email*
  - *Find time slots applicable to all the team members and your advisor as many as possible*

- *Sample email to request the meeting (next page)*

Sample email for Kickoff

Title: Request for project kick-off meeting with ESD@SUTD

Content:

Dear …. (Company contact person)

I am …, a second year student from ESD@SUTD. I am the team (leader/ coordinator) for the project "…" (project name) sponsored by your company … (the company name) for the "Data and Business Analytics" course in ESD at SUTD this fall.

I am glad to inform you that the whole team have signed the NDA and are ready to start. I would like to request for our project kick-off meeting sometime next week. It would be great if we could meet on …. (specific date and time; e.g. Wednesday (20/Sep) afternoon after 1:30pm) in SUTD. If not, would you please advise your preferred date and time?

If you have any other questions, please let me know. Thank you very much for your support. Looking forward to your reply.

Best regards,

Kickoff Meeting

- *Bring and submit your NDAs to the company*
- *Your advisor will be present but mainly for introduction and connection*
- *You should do the following*
  - *Collect business cards*
  - *Establish reporting relationship*
    - *Who is client liaison in your team, who is liaison in the company?*
  - *Focus on understanding what the client wants*
    - *Okay to ask 'dumb' questions (better now than later)*
    - *Re-state what the client wants in your language*
  - *Take notes*
    - *Your memory has rapid exponential decay*

Questions to clarify during Kickoff

- *Understand your client*
  - *Who is your client? What is their business? And their business goal?*

- *Understand your project*
  - *What is the client's problem?*
  - *How is the problem related to the client's business?*
  - *What the client expects from the project?*

Questions to clarify during Kickoff

- ## *Understand the data requirement*

  - ### *What data the client could provide?*

    - *Be specific: tables, rows, columns*
    - *Avoid personalized data*

  - ### *Is the data ready? How long it would take the client to prepare the data?*

  - ### *When could you get the data?*

  - ### *What data the client expects you to collect?*

- ## *Understand the workload*

  - ### *How many hours the client expects you to spend on the project?*

Meetings After Kickoff

- *Face to face (strongly recommended) or Skype*
- *How frequently to meet?*
  - *At least once per month*
  - *Best is fortnightly*
  - *Weekly is difficult (Skype is ok)*
- *Share results as you find them (don't try to surprise the client)*
- *Important to explain the assumptions you are making (they could be wildly incorrect)*
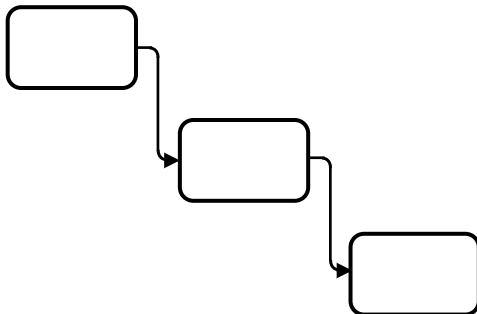
Four-Quadrant Diagrams

Accomplishments Since Last Meeting

- Xxx
- Xxx
- Xxx
- Xxx
- Xxx
- Xxx

Schedule of Next Activities

- Xxx
- Xxx
- Xxx
- Xxx
- Xxx
- Xxx

Updated Project Plan (IDEF0)

Issues to Discuss

- Xxx
- Xxx
- Xxx
- Xxx
- Xxx
- Xxx

Project Timeline

- *See Project Timeline 2018.doc*

Expectations

- *Your advisor is **not** your project manager: you are.*

- *Be polite, but persistent*

- *Be formal with communications*
  - *Not "Hey there!"*
  - *Copy advisor on all communication with client*

- *Be prepared as much as you can*
  - *E.g., Gain a basic understanding of the company prior the kick-off meeting (visit their websites, or read some latest news about the company)*

Get started now

1. **Appoint liaison and send e-mail addresses to advisor now**

2. **Get SUTD Undertaking form and NDA from your advisor and make every team members sign them**

3. **Submit the SUTD Undertaking forms and one copy of NDAs to your advisor or Ms. Lim Lee Chen (building 1, 7th floor, 1.702-S05); keep and bring the other copy of NDAs to the kickoff meeting**

4. **Get the contact info of your client from your advisor and start to arrange the kickoff** *(don't forget to copy your advisor)*

Your project journey starts here! Best luck!

Get Ready for Lectures

- *Download pre-work activity*
  - *"Get Ready for ... SQLite"*
- *Follow the steps to install SQLite*

Data and Business Analytics