NUS National University of Singapore

School of Computing

BT4103
BUSINESS ANALYTICS CAPSTONE PROJECT

COURSE OVERVIEW & PROJECT BRIEFING

15 Jan 2025

Course Lecturers

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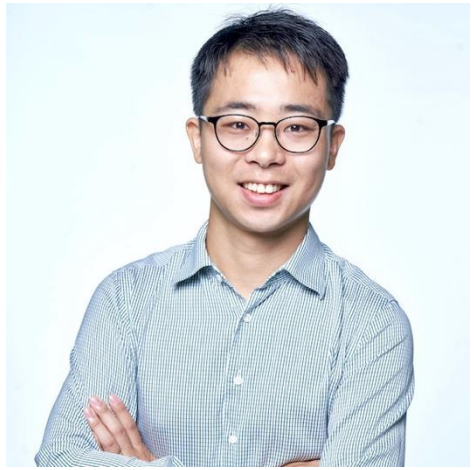

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Teaching Assistants

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Agenda

1. Course Overview
2. Learning Objectives
3. Student Tasks
4. Course Schedule
5. Deliverables
6. Assessment
7. Questions

1. Course Overview

Complete (in groups) a real-world business analytics project based on principles that students have acquired through the degree program

Emphasis will be placed on

- Understanding the objectives of the analytic exercise
- Applying appropriate analytic methods to deliver impactful solutions to clients
- Demonstrating complex analytical results in effective manners (oral & writing)

Teaching Modes

- Group-based consultations with instructors and field supervisors
- Group discussions & group work within the project team
- Self-learning

2. Learning Objectives

Develop professional capabilities

Improve critical-thinking, analytical decision-making and industry-relevant project management capabilities to investigate complex business analytics problems & propose project-based solutions

Develop personal capabilities

Be more self-directed

Be able to communicate effectively through team interactions & consultations

Develop teamwork skills

Be able to manage team and project processes effectively & efficiently

3. Student Tasks

Project Tasks	Project Management Tasks
• Requirements Gathering • Data Collection • Data Preparation • Data Analysis • Visualization • Evaluation **Output** Slides, Codes, Dashboard, Report	• Project Charter (Project Timeline, Roles…) • File Sharing and communication within team and with instructors (MS Team – separate channels) • Weekly Update (Weekly logs, Team Meeting Agenda/Minutes) • Consultation Minutes • Presentations (Requirements, Interim, Final) • Self/Peer evaluation (Interim and Final)

3. Student Tasks

Project Tasks	Project Management Tasks
• Requirements Gathering • Data Collection • Data Preparation • Data Analysis • Visualization • Evaluation **Output** Slides, Codes, Dashboard, Report	• SCRUM Documentation (Project team, Product Backlog, Sprint Backlog, Daily Scrum, Sprint Review/Retrospective) • File Sharing and communication within team and with instructors (MS Team Channel) • Sprint demos (Requirements, Interim, Final) • Self/Peer evaluation (After Interim and Final)

4. Course Schedule

Week	Date	Agenda	Weekly activities
1	15-Jan	Course Overview Project briefing	Form a project group of **4-5** members by **15/01 15:00** Bidding starts from **15/01 19:00** Bidding ends at **15/01 21:00** Bidding results available on **17/01** Field supervisor email contacts available on **18/01**
2	22-Jan	**Meet field supervisors**	Contact and meet field supervisors by **24/01**
3	29-Jan	Consultation (Optional)	Public Holiday Upload weekly update
4	5-Feb	**Project planning** Consultation 1	Upload **Project Charter** by end of week 4 (signed by respective field supervisors) Upload weekly update
5	12-Feb	**Requirement presentation**	Upload presentation slides
6	19-Feb	Consultation (Optional)	Upload weekly update
	26-Feb	**Recess Week**	
7	05-Mar	Consultation 2	Upload weekly update
8	12-Mar	**Interim presentation**	Upload presentation slides Submit mid-term self/ peer evaluation to Canvas
9	19-Mar	Consultation (Optional)	Upload weekly update
10	26-Mar	Consultation 3	Upload weekly update
11	2-Apr	Consultation (Optional)	Upload weekly update
12	9-Apr	Consultation 4	Upload weekly update Obtain Acceptance Signature from Field supervisors
13	16-Apr	**Final presentation**	Conduct client satisfaction survey Upload presentation slides, reports, and codes Submit final self/ peer evaluation to Canvas

* All submissions to Canvas/MS teams

Weekly consultations & Requirement / Interim presentations will be conducted in person on campus or via Zoom (cameras must be turned on at all times).

Final presentation will be conducted in person on campus.

5. Deliverables

Requirement Presentation

Content

- What is the problem you are trying to solve? Please be specific as much as you can. Rather than state a big and general problem, we will look for a very specific but interesting problem which can be addressed using an appropriate analytical method.
- What are the business settings relevant to your problem? Eg: business processes, business owners, decision makers, analytics users, constraints...
- Why is the problem theoretically, practically and managerially interesting? Also indicate: what are the business decisions or objectives that the project will support?
- How do you design the study or experiment? What method will you use? E.g., theoretical (e.g., mathematical modeling, simulations...), empirical (e.g., econometrics…), experimentation (lab experiments, field experiments, natural experiments?..) and so on. Why do you use this method? Please also indicate what data, analyses, and analytic tools are required.
- What are the functional vs analytical requirements?
- What is your expected outcome?

Format: Slides, 20 min presentation + 5 mins for Q&A

5. Deliverables

Interim Presentation

- Your team is required to deliver a 20 min presentation + 5 mins for Q&A.
- The goal of this presentation is to grasp what you have done so far and the upcoming plans towards project completion
- Dress Code: Business Formal Attire

5. Deliverables

Final Presentation

- Your team is required to make a 20 min presentation + 5 mins for Q&A.
- The goal of this presentation is to understand the whole work that your team have done.
- The panelists will include NUS lecturers and Field Supervisors. At the end of your project, we will conduct the Client Satisfaction Survey.
- Dress Code: Business Formal Attire

5. Deliverables

Documentation

- You are required to submit presentation slides, final report, code, and relevant documents to both NUS lecturers (on MS Team) and your Company. Please also attach the Supervisor Acceptance Letter in your final report.
- Final report should include the following:
  - Executive summary
  - Analytic requirements
  - Function requirements (system, data source…)
  - System design/user interface/platform. Please justify your choice of method/performance indicator/model/design (e.g., How did you come up with that choice and why choose it over available methods in literature? Please also cite the relevant literature.)
  - Use case
  - Recommendation (if applicable)
  - Conclusion
- Code and Data
  - Please submit data sample/real data to MS Team. If you do not have the data sample, do describe in your report how we could access the data source.
  - Ensure that your code is readable (commenting & documenting; use comments to explain why things are happening…)

5. Deliverables

Weekly Log

- Content
  i. What did you achieve last week and who did it
  ii. What are you planning to do next
  iii. What are your current challenges?
  iv. How are you going to overcome? Do you need support from clients and us? What are your expected outcomes?
- Format
  - Follow the template “Weekly log template.docx” in CANVAS

6. Assessment

Individual Component	Group Component
Consultation Participation **25%**	Presentations + Project Deliverables **50%**
Weekly Logs + Peer review submissions **10%**	Client Satisfaction **15%**

Note: The score for the group component will be normalized based on individual contribution to the team, which will be determined via a peer evaluation process and a client satisfaction survey at the mid/end of the semester

Project list

	Company	Title
1	Vantage Point Security Pte Ltd	Testing As A Service (TAAS)
2	Vantage Point Security Pte Ltd	SecureSpec: AI-Driven Security Testing Framework
3	Vantage Point Security Pte Ltd	Project TROT
4	Vantage Point Security Pte Ltd	Automated CIS Benchmark Compliance Verification System
5	paymentinapp Inc.(Korea), PIAPP PTE. LTD.(Singapore)	UrbanFlow: AI-Driven Mobility-as-a-Service for Seamless Public Transit
6	Marsh	Marsh eTrack - Client Emissions Tracker
7	Hare Innovation Company Limited	TransactAI - Personal Account Dealing
8	Owna House Services Company Limited	Popup Verbal Reasoning Challenge: Practice Made Easy
9	ST Engineering	Multimodal Transportation Dashboard
10	Tata Group	Development of forecasting model for China, Japan, Korea HRC Price and arrive at import parity triangulation for landed prices in India for Tata Steel
11	Tata Group	Develop an analytical engine to deliver a 360-degree view of customers by aggregating and analyzing data from diverse customer touchpoints for Tata Steel
12	Tata Group	Customer Experience (CX) Platform Evaluator Using Large Language Model (LLM) for Tata Steel
13	RetiMark SG Pte Ltd	Leveraging Analytics for Success: Data-Driven commercialization Strategies for iDMas DR Across Diverse Markets
14	DSO National Laboratories	Investigating the Vulnerabilities of Question-Answering System
15	Recce Labs	LLM-Powered Marketing Analytics Dashboard Development
16	NUS ODPRT	AI Chatbot for NUS ODPRT

Questions?