Hong Kong University of science and Technology
Academy of Interdisciplinary Studies

TEMG4950 T&M Consulting for a Corporate Client
Spring term of 2024-25

1. GENERAL INFORMATION	
Course title:	TEMG4950O T&M Consulting Project: **"Next Intelligent Wealth Advisor for UBS"**
Course credits:	4 credits
Instructor:	Prof. Betty LIN
T.A.:	Alwin Choi / Year 5 DDP (COFINA)
	Ive Wang / Year 5 DDP (BTMARK)
Office & office hours:	By appointment
Class meeting:	Thursday evenings, 6:00pm to 8:50pm
Venue:	Room 5619 Lift 31-32
Course exclusion(s):	n/a
Course pre-requisite:	(1) COMP1021|COMP1023 (or Python programming internship) AND
	(2) TEMG3950|LABU2040|LABU2060|LANG2030|LANG2010 (or Case Analysis courses)
	❖ Students who do not fulfill course pre-requisites but are confident of content knowledge and skills are welcome to apply but must supply justification.
Course enrollment:	All students are welcome to apply. Attendance of the 1st class meeting on Feb 6th is mandatory. Interested students should use SIS to request "*instructor consent*" and upload two files: latest transcript and CV. After receiving consent to enroll, students proceed with "*course enrollment*".

2. COURSE DESCRIPTION

TEMG4950 "T&M Consulting for an Enterprise Client" is a series of experiential-learning courses where students role-play consultants using technology & management (T&M) strategies to solve a trendy and complex challenge faced by an industry leading firm. This experiential-learning course uses McKinsey Engagement Methodology and is organized into the following phases:

- **Phase I "Preparation"** - for students to acquire relevant knowledge and skills in consulting, business domain knowledge, relevant technologies, market trends, and brainstorm potential issues and hypothesis before meeting the client.
- **Phase II "Data Collection"** - for students to meet with corporate sponsors and subject experts over two to three full class meetings to understand project requirements, different stakeholder perspectives to validate information in earlier phases to capture client's current situation, pains and needs, and develop strategies for high-impact outcome.
- **Phase III "Recommendation Brainstorm"** – for students to present draft recommendations to different stakeholders for feedback and buy-in.

- **Phase IV "Final Presentation"** – for students to present their final recommendations to client executives and industry subject experts in a formal setting which typically takes place at the client's office with audiences from across their organization.

Because every client's business and operating constraints are different, TEMG4950 consulting courses are unique. Students can repeat TEMG4950 courses. In case there is an overlap in scope or technology with a prior project, priority will be given to students without experience. Course credits earned range from 3 to 5 credits, depending on the complexity of the project.

3. CASE BACKGROUND

The financial industry is experiencing a significant shift towards chat-based interactions between Wealth Management Clients and Advisors, catering to the busy lifestyles of modern high net-worth individuals. Starting in 2024, UBS's client service teams have noted a surge in chat messages, surpassing traditional phone calls. Currently, UBS client advisors manually monitor and respond to incoming chat messages from multiple clients via proprietary channels in WhatsApp and WeChat.

To enhance efficiency and scale operations, an artificial intelligence (AI) chat solution capable of addressing client requests is essential. Large Language Models (LLMs) have emerged as effective platforms for developing chatbots that provide human-like responses, drawing from extensive knowledge bases. Additionally, LLMs can be further enhanced using a variety of open-source libraries to incorporate features like translation and proprietary knowledge augmentation.

4. CASE CHALLENGE

Students are tasked with evaluating whether Generative AI (GenAI) platforms, such as Large Language Models (LLMs) and Retrieval-Augmented Generation (RAG), can effectively support a high-touch service model for UBS. The consulting engagement outcome is to recommend how UBS might leverage GenAI to respond to client chat requests 24/7 with human-like responses, minimizing hallucinations while ensuring reasonable performance. It is also possible to recommend that the timing for implementation may be premature.

Client chat requests may include price inquiries, portfolio updates, order placements, status inquiries, amendments, cancellations, and notifications.

Due to stringent requirements in the financial services industry—such as client confidentiality and system security—students will not have access to UBS's internal systems or client data. Instead, they will achieve proof-of-concept objectives through creative simulations. For example, to simulate integration with messaging platforms like WhatsApp or WeChat, students can perform "get" and "print" actions to indicate that messages have been fetched and sent. For order status inquiries, they can simulate advancements based on elapsed time. At any time, Client Advisors can request AI assistance, potentially managing up to ten active client conversations simultaneously. Importantly, the system must retain memory of previous chats to provide context for ongoing discussions.

Students will also explore various chatbot service models, including full automation and hybrid approaches that implement a "Human in the Middle" strategy. This exploration will enhance their understanding of how to effectively balance technology and human interaction in client engagement.

5. INTEDED LEARNING OUTCOME

Students will gain foundational knowledge in the following topics to effectively apply them in the project as a team, with different team members contributing varying depth of knowledge in each area.

The following topics may be covered through lectures, workshops and/or self-directed learning:
1. **Application of McKinsey Consulting Engagement Methodology:** Understand how to implement this methodology for the digital transformation of client advisory services, considering organizational impact of change.
2. **Software Prototyping Skills Enhancement:** Develop expertise in one or more of the following areas:
   - Design user-friendly interfaces for non-technical users.
   - Utilize LLM plus RAG technologies for generating human-like text conversations.
   - Support both English and Mandarin languages.
3. **Persuasive Presentation Skills**: Enhance presentation techniques using the latest visual aides to effectively engage a panel of business and technical executives.
4. **Teamwork in Multidisciplined and Multicultural settings**: Improve collaboration skills within diverse teams, fostering effective communication, and project coordination.

6. COURSE GRADE

Assessment Methods	Description	Weight (%)
Individual Assignments	Class attendance and in-class contribution. Self-study financial investment products, front-end and backend development toolkits.	25%
Team-based Assignments	Project preparation, Design Thinking work products and interim reports	20%
Final Deliverables	Final consulting report recommendations, prototype code and Q&A handling	35%
Peer assessment(s)	Three rounds of anonymous performance feedback by teammates	20%
	Total	100%

7. COURSE SCHEDULE

Regular class meeting time is Thursday evenings from 6:00pm to 8:50pm plus private coaching per student-consultant team by either the course instructor or project mentor from the sponsors. Classes will be held in-person on campus or at the client's office. Attendance and active in-class participation will be graded.

Tentative class meeting plan:

- W01 Feb 06: Course Introduction (overview, assignments, and student selection)
- W02 Feb 13: Preparation I (Agile programming, Git and front-end development tools)
- W03 Feb 20: Preparation II (LLM & RAG and other back-end development tools)
- W04 Feb 27: Preparation III (Consulting methodology, project kick-off preparation)
- W05 Mar 06: Project Kick-off and Stakeholder Interviews
- W06 Mar 13: Prior LLM Project Experience Sharing by students
- W07 Mar 20: Project Deep-dive via Design Thinking Workshop
- W08 Mar 27: Advanced Topics and Project Tips
- W09 Apr 03: < mid-term break>
- W09 Apr 10: 1st Draft Proposal Review (Instructor, T.A.s)
- W10 Apr 17: 2nd Draft Proposal Review (Instructor, Client Advisor Mentors)
- W11 Apr 24: 3rd Draft Proposal Review (Instructor, Client Services Stakeholders)
- W12 May 02: Dressed Rehearsal (Head of Client Advisory Services)
- W13 May 09 (Fri): Final presentation (Client Executive Sponsors, Industry Experts)

8. COURSE POLICY (regarding plagiarism, copyright, academic honesty, attendance, etc.)

Course policies will strictly follow HKUST policies. Cheating, dishonesty, and plagiarism will not be tolerated at any time and may result in strict sanctions.

1. **Attendance:** Please be punctual in class. Late arrival by more than 5minutes or early departure will be marked as absent unless student notifies instructor at least 24-hour in advance with legitimate reasons plus supporting evidence.
2. **Participation:** Active participation is required and is an important part of the grade. Students are required to make at least one suggestion, comments, and question per class meeting. This can be done in person or online via Zoom chat.
3. **Beeping devices:** mobile phones and other beeping devices need to be turned off or put on silent mode. Portable computers, laptops and tablets are allowed so long as they do not lead to inappropriate behavior and disturbance.
4. **Video recording:** recording may be arranged by the School and the Instructor. Any other recording (photo, audio, or video) is strictly prohibited. Lectures are the copyright property

of the Instructor. Any recording can only be produced with the express consent of the instructor.

5. **Exam:** There will be no make-up exam. Unexcused absence will result in zero grading for that test. Students are advised to contact the instructor prior to week 3 to negotiate schedule conflicts with other courses, especially during mid-term time.

6. **Course materials and handouts**: Course materials will be posted on the University's CANVAS, please check the website on a regular basis for new postings. The Lecture notes are the copyright property of the instructor and are provided for the sole private use of the students. They may not be reproduced or disseminated without the express consent of the instructor.

9. GENERAL INTENDED LEARNING OUTCOMES

T&M Dual-degree Program's Intended Learning Outcomes
1. P-ILO1: Adopt an inter-disciplinary approach to tackle complex real-world problems.
2. P-ILO2: Communicate effectively with people of different levels and work areas.
3. P-ILO3: Transfer acquired knowledge to meet changes and challenges in different fields.
4. P-ILO4: Engage in activities that lead to impact of social improvement.
5. P-ILO5: Be able to create and innovate with divergent thinking.
6. P-ILO6: Be able to apply technical and business skills in an integrated manner in problem-solving.
7. P-ILO7: Be a leader in the field of technology management and innovation, and entrepreneurship.

TEMG4950 Course Intended Learning Outcomes
1. Acquire insight into project sponsor's organization and empathy with their challenges (P-ILO3)
2. Become familiar with technology trends and industry landscape (P-ILO1, P-ILO4)
3. Gain confidence to apply problem solving techniques covered in the course (P-ILO1, P-ILO5, P-ILO6)
4. Improve professional communication in writing and public speaking (P-ILO2, P-ILO7)
5. Improve teamwork across cultures, age and disciplines (P-ILO5)