



UTM

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**SECP1513: TECHNOLOGY AND INFORMATION SYSTEM
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ASSIGNMENT 3: ACADEMIC WRITING

TOPICS COVERED:

1. Speaker Experience & Background
2. Basic Skills Required for Computer Science
3. Skills Required by the Industry (Project Management & AI Coding)
4. Student Reflection: Success in the Next 4 Years

PREPARED BY GROUP 5 SECTION 04:

NAME	MATRICS NUMBER
AHMAD NUR SHAZLAN BIN BAHRI	A25CS0178
AMAL HIJAZ BIN ABD WAHID	A25CS0188
SHARWIN RAJ A/L K SEGAR	A25CS0349
AMREISH A/L UMAPATHY	A25CS0190

LECTURER'S NAME: DR. SHAFAAATUNNUR BINTI HASAN
DEADLINE: 29/12/2025

1. Introduction and Speaker Experience

The session "Industry Talk 2" was delivered by **Ts. Hj. Abdul Alim Bin Abdul Muttalib**, the Head of Technology and Innovation at Serunai Commerce Sdn Bhd. His expertise spans large-scale system development and project management, bridging the gap between academic theory and industrial reality. The talk focuses on the critical intersection of Project Management, the Software Development Life Cycle (SDLC), and the emerging paradigm of "Agentic Coding" using AI tools. Ts. Abdul Alim emphasized that while coding is vital, the ability to manage projects—planning, coordinating, and aligning technical work with business goals—is what ensures a sustainable career in the industry.

2. Basic Skills Required for Computer Science

Learning the basics is crucial for Computer Science students. The speaker emphasized that students need to have a firm understanding of "Core Knowledge," which accounts for 60% of the skill set needed to be prepared for real-world applications.

- **SDLC Proficiency:** Students must understand the six phases of the SDLC: Requirement Analysis, Design, Implementation, Testing, Deployment, and Maintenance. The speaker used the analogy of "cooking nasi lemak" to explain that skipping phases (like serving rice before cooking it) leads to failure.
- **Fundamental Engineering Principles:** Proficiency in data structures, algorithms, and system architecture is essential. Without this foundation, students cannot effectively validate the output of AI tools, leading to "buggy systems" and poor scalability.
- **Academic Perspective:** Research by Verma et al. (2022) reinforces this, stating that while tools evolve, the foundational ability to analyze algorithms and structure data remains the primary predictor of success in computer science roles.

3. Skills Required by the Industry

The industry demands more than just code generation; it requires "Agentic Coding" and a strong project management capabilities.

- **Agentic Coding:** The industry is shifting toward a model where the human programmer retains control over architecture and design decisions while using AI (like Kesa.ai or ChatGPT) as an assistant to speed up repetitive tasks. The speaker also highlighted that employers favor candidates who can deliver 10x output by leveraging these tools effectively, provided they maintain high architectural standards.
- **Project Management & Collaboration:** Employers prioritize candidates who can both develop and manage projects. This includes understanding of project management approaches like Agile (iterative, flexible) versus Waterfall (linear, fixed requirements).
- **Soft Skills & Role Clarity:** In large-scale projects, collaboration is key. Understanding distinct roles such as Project Manager, Designer, and Tester is crucial because a single person cannot realistically handle large-scale projects alone.

4. Student Reflection: How to be Successful in Computer Science in the Next 4 Years

To achieve success in the competitive field of Computer Science over the next four years, I must adopt the "Success Formula" shared during the talk: **40% AI-assisted proficiency + 60% Core Knowledge.**

Firstly, I will prioritize mastering the **fundamentals**, which are data structures, algorithms, and design patterns, before becoming over-reliant on AI tools. As the speaker warned, "fail to plan, plan to fail"; therefore, I will approach my Final Year Project (FYP) by writing detailed specifications and manually prototyping the Minimum Viable Product (MVP) to ensure I fully understand the system architecture.

Secondly, I will embrace **Agentic Coding** by integrating tools like Kesa.ai into my workflow to handle boilerplate code, allowing me to focus on high-level logic and system design. This will enable me to meet the industry's expectation of "10x productivity" without sacrificing code quality.

Finally, I will develop my **Project Management skills** by treating every assignment as a mini-project, applying SDLC phases, and practicing Agile methodologies like "sprints" and "retrospectives" in my group work. By balancing technical depth with management agility, I will ensure I am not just a coder, but a future-proof software engineer.

References

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2. **Sommerville, I.** (2011). *Software Engineering* (9th ed.). Addison-Wesley. (Focus: The importance of SDLC and Requirements Engineering).
3. **Verma, A., Lamsal, K., & Verma, P.** (2022). "An investigation of skill requirements in artificial intelligence and machine learning job advertisements." *Industry and Higher Education*, 36(1), 63-73.
4. Rigby, D. K., Sutherland, J., & Takeuchi, H. (2016). "Embracing Agile." Harvard Business Review, 94(5), 40 -50.