

College of Design
and Engineering

COMPUTING

(DESIGN AND ENGINEERING)





Computing
(Design and Engineering)

A New Second Major or Minor that Focuses on Deepening Computing Skills

To prepare the next generation of designers and engineers, the second major/minor in Computing (Design and Engineering) aims to equip students with interdisciplinary knowledge and skills. Since computing now permeates all aspects of our lives, this programme ensures that students remain at the forefront of advancements in design and engineering, enhancing a student's career prospects. Students will learn fundamental computing concepts, analyse complex problems, use computing-based tools, and apply cross-disciplinary techniques to design solutions via digitisation and automation.

Career Options

- AI/Data Engineer
- Biomechanics Engineer
- Computational Materials Engineer
- Computational Mechanics Engineer
- Computer Hardware Engineer
- Design Technologists
- Digital Architect
- Digital Manufacturing Engineer
- Games Developer
- Process Optimisation Engineer
- Robotics/Automation Engineer
- Software Engineer
- Smart Building Designer
- UI/UX Designer
- Verification & Validation Engineer
- Virtual/Augmented Reality Architect

Student Learning Outcomes

The second major/minor in Computing includes a computer science-based core and an extensive basket of applied electives through which students can customise their learning to suit their interests and career aspirations. This will enable students to:

- Understand fundamental computing concepts and the underlying components that are required for the operation of computing systems.
- Analyse complex problems and use computing-based tools and techniques to find solutions to these problems.
- Apply cross-disciplinary tools and techniques to the analysis and design of practical strategies for digitisation and automation.
- Evaluate emerging technologies in computing and their potential impact on society and industry.
- Gain critical thinking, perspective sharing and collaboration skills.

Words from Recent CDE Alumni Who Took Computing-related Courses



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Joseph Cheng

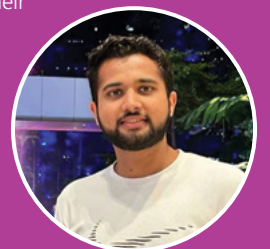
Bachelor of Engineering (Biomedical Engineering), Class of 2023;
Minor in Computer Science;
Research Assistant,
The N.1 Institute for Health

"As a researcher at the N.1 Institute for Health on a Systems / Computational Neuroscience project, I am making use of my programming skills/knowledge extensively to analyse huge volumes of neural data. Processing and analysing data in the current age would be nigh impossible without the use of computers and programming scripts. Furthermore, many of the mathematical computations that engineers and researchers have to perform for their jobs are infeasible to solve by hand, and possessing computational thinking would allow us to offload tedious computations to machines that can provide fast and accurate answers. AI tools such as ChatGPT have seen a huge surge in popularity for their amazing capabilities and usefulness in aiding us with tasks, but ultimately, they are built upon cleverly designed algorithms and scripts. As such, I believe that computing and programming skills will continue to remain relevant in the future, even as AI tools gain more and more features."

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Abdulhusein Jabir Poonawala

Bachelor of Engineering (Mechanical Engineering), Class of 2021;
Minor in Computer Science;
Founder, MaaJTek Pte Ltd

"My journey at NUS, pursuing a Mechanical Engineering degree while simultaneously delving into Computer Science courses, has been nothing short of transformative. This unique combination has empowered me with a dual perspective giving me a competitive edge in the industry. Mechanical engineering honed my ability to design complex systems, while computer science equipped me with the tools to bring these systems to life through automation and intelligent programming. This synergy of skills became the cornerstone of my startup, MaaJTek. Here, we blend innovation with experience to deliver state-of-the-art solutions, from automation to industrial IoT systems across Southeast Asia, India, and the Middle East. My academic path has taught me the power of interdisciplinary knowledge, enabling me to continuously stay ahead in the ever-evolving engineering landscape. I strongly encourage aspiring engineers to consider integrating computing with their studies; it opens up a multitude of possibilities and equips them with valuable skill sets in today's world."





Jody Zou

Bachelor of Engineering (Electrical Engineering),
Class of 2022
Software Engineer, Visa



"Computing operates at an abstraction level that is highly relevant to the opportunities and challenges that societies encounter in the 21st century. I acquired several concepts and skills through computing courses, building upon the foundations of Electrical Engineering. The exposure to both these fields has afforded me a holistic learning experience that gave me a broader perspective and a deeper appreciation of various technologies. It offered me a variety of employment choices upon graduation, and the ability to pick and pursue a purposeful and rewarding career."




Eligibility

The second major/minor in Computing (Design and Engineering) is only open to students reading any Design and Engineering primary major, except students taking Computer Engineering as a primary major and students taking a second major or minor in Computer Science.

Students may apply at the point of admission, where the selection criteria are based on their university admission score and/or their proficiency in mathematics. "In-flight" (i.e., current) CDE students may also apply for this second major/minor.



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