

immerse
EDUCATION

Software Development & AI

SYLLABUS OVERVIEW

16-18 YEARS OLD

INSPIRING MINDS SINCE
2012
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IMMERSE EDUCATION



About the Programme

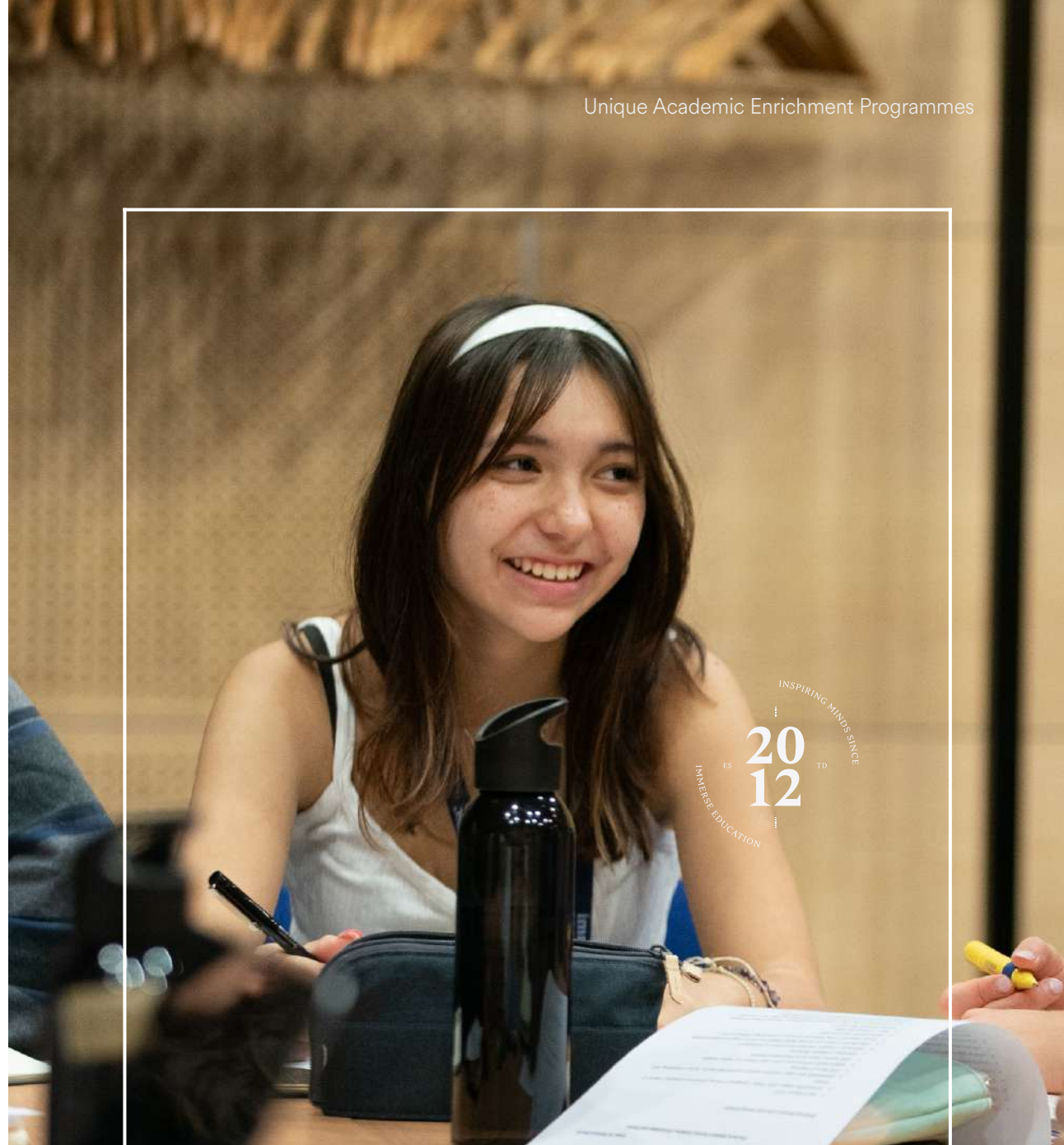
Immerse Education is an award-winning provider of summer experiences offering academic and career-focused programmes for high school students from worldwide, in such locations as Boston, Cambridge, London, New York, Oxford, San Francisco, Singapore, Sydney, Tokyo, and Toronto. These programmes aim to deliver engaging, academically challenging content within a university-style classroom environment.

Through academic sessions, the programme offer young students unique and valuable insights into what it would be like to study their chosen subject at an advanced level. This Syllabus Overview provides a summary of the topics and subject areas that participants can encounter during their studies with Immerse.

Academic Sessions

The academic sessions at Immerse are arranged into modules to enable participants to explore a broad range of topics over the course of their programme. The modules included in this syllabus overview are indicative but not prescriptive.

Tutors are encouraged to include their own specialisms and also focus on any particular areas of interest expressed by participants within the class. They may choose to provide further detail on a specific topic, or they may include new material and information that builds on the knowledge already developed during the programme.





Personal Project

Each programme includes an element of individual work, generally termed the 'Personal Project'. This can take many forms but is commonly an essay or presentation delivered on the final day of the programme. Participants will receive feedback on this work which may also be mentioned in the participant evaluation which is provided in writing by the tutor once the programmes have ended.



Preparatory work

Some tutors may ask participants to complete some preparatory work, such as reading or a series of exercises in advance of the programme. Participants are strongly encouraged to complete this work since it will be included in the opening sessions of the programme. Any preparatory tasks will be provided in advance of the programme directly to the participant.

Academic Difficulty

As all of our programmes are designed to provide a unique introduction to advanced material, the syllabus will be academically challenging at times.

This is something to be excited about and all of our tutors will encourage and support participants throughout the programme. Immerse Education aims to develop every participant regardless of ability, and our tutors will adapt their teaching to individual needs.



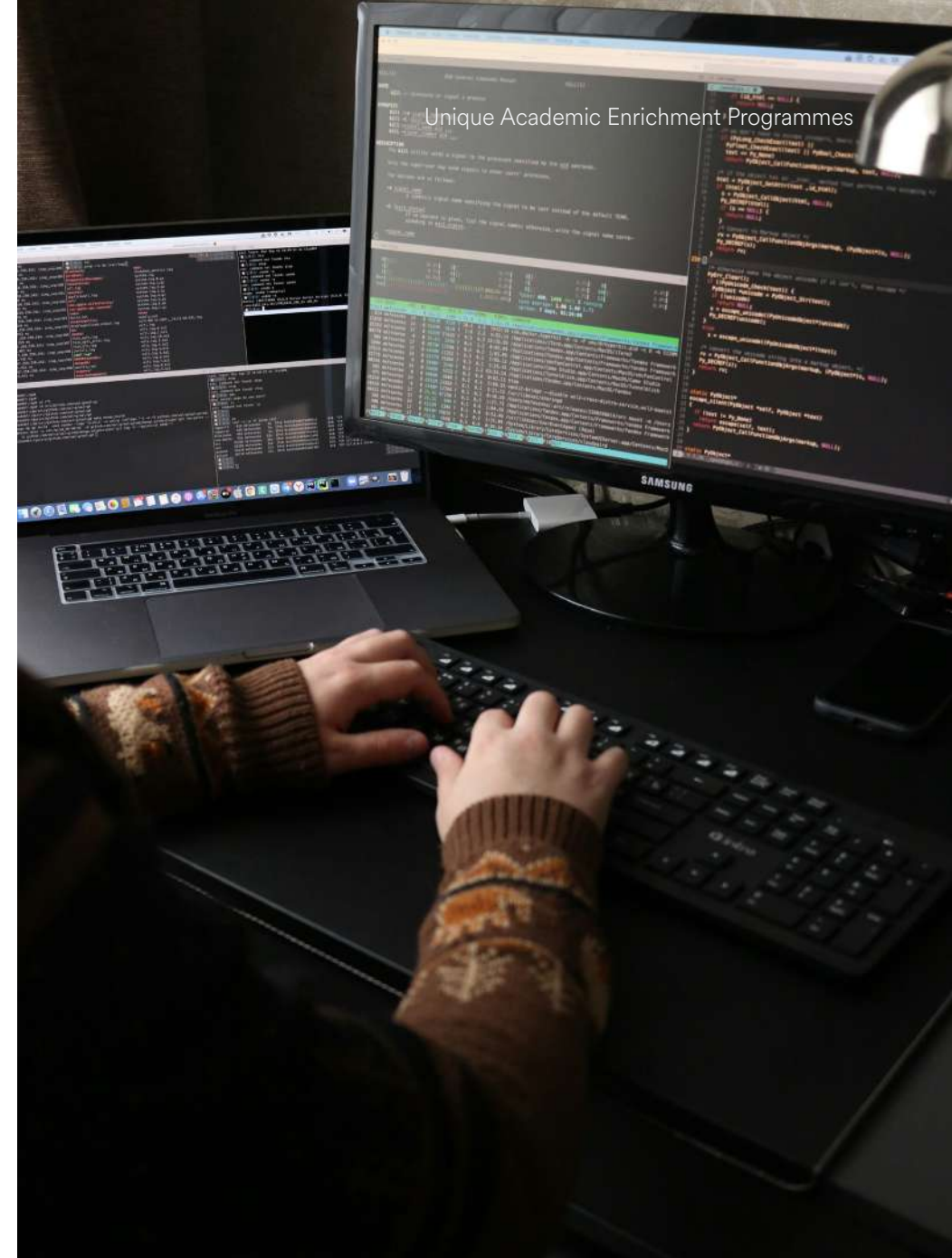
Aim of the Software Development & AI Programme

The Immerse Education Software Development & AI programme in Singapore provides an immersive exploration of software development and artificial intelligence in one of the world's most innovative and future-focused cities. Designed for students passionate about technology, this programme emphasises building skills in programming, algorithmic thinking, and problem-solving while uncovering the transformative potential of AI. Through hands-on projects and exposure to cutting-edge technologies, participants will gain both theoretical and practical knowledge.

Set in Singapore's thriving tech ecosystem, the programme also offers insights into academic and career opportunities, preparing students to excel in the dynamic and ever-evolving field of software development and AI.

Introduction to Coding Practices & AI Fundamentals

Embark on an introductory module that delves into the essential components of coding practices and the transformative potential of artificial intelligence. You'll explore coding languages, algorithmic thinking, and the basics of AI applications, forming the foundational understanding necessary to engage in undergraduate-level theories in software development and AI.



Unique Academic Enrichment Programmes

Coding Fundamentals and Programming Paradigms

Embark on a comprehensive journey through coding fundamentals and programming paradigms in this foundational session. Participants will uncover the intricacies of programming languages, syntax, and core concepts essential for software development. Dive deep into the principles of object-oriented and functional programming, gaining a comprehensive understanding of modular design's significance in creating efficient and robust software solutions.





Coding Workshop with Developers

Professional Developers will host our coding and AI workshop. Participants can engage in coding exercises, explore machine learning concepts, and gain insights into AI applications. This workshop offers exposure to cutting-edge technologies under the guidance of tech experts.



Artificial Intelligence: Concepts and Applications

Delve into the multifaceted world of artificial intelligence and its diverse applications in this illuminating session. Explore the fundamentals of machine learning, neural networks, and deep learning algorithms. Gain insights into real-world AI applications, from natural language processing to image recognition. Engage in discussions about AI's ethical considerations and its potential impact on industries and society. Through thought-provoking examples, participants will cultivate a nuanced understanding of the transformative power of AI.

Data-driven Decision-making with Machine Learning

Navigate the landscape of data-driven decision-making using machine learning techniques in this insightful session. Participants will explore supervised and unsupervised learning, classification, regression, and clustering algorithms. Dive into the process of feature engineering, model selection, and evaluation. Through hands-on exercises, attendees will gain practical experience in utilizing machine learning to extract valuable insights from data. By the end of the session, participants will possess the foundational skills to harness data's potential for informed decision-making.



Ethics and Responsible Development

Engage in thought-provoking discussions about the ethical considerations and responsible development of AI technologies and applications. Explore topics such as bias in AI algorithms, algorithmic transparency, accessibility in code, and the broader societal implications of AI-driven decisions. Delve into strategies for mitigating bias and ensuring that AI systems and applications promote fairness and inclusivity. By the end of the session, participants will be equipped to navigate the intricate ethical landscape surrounding software development.



AI in Industry: Transforming Businesses

Embark on an exploration of AI's transformative impact on industries and businesses in this forward-looking session. Participants will investigate how AI technologies are enhancing customer experiences, optimizing supply chains, and driving innovation. Engage in discussions about the challenges and opportunities of integrating AI into various business processes. Through real-world case studies, participants will gain insights into how AI is reshaping industries and revolutionizing the way companies operate.



Real World Project

Embark on a coding adventure by designing and building a software application that leverages the power of AI to solve a real-world challenge. From conceptualization and algorithm design to coding implementation and rigorous testing, you'll bring your software development and AI integration skills to life.





Partnerships & Accreditation



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