



immerge
EDUCATION

Natural Sciences

SYLLABUS OVERVIEW

13-15 YEARS OLD

20
12

INSPIRING MINDS SINCE
IMMERSE EDUCATION

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About the Programme

The aim of these introductory programmes is to provide participants with academically challenging content in a classroom environment based on the university style of learning. Through academic sessions, the programmes also 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. It has been carefully created by our expert tutors who are members of faculty at world-leading universities, and who have experience in teaching undergraduate students.

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.

Session Aim

The Immerse Education Natural Science programme offers students the opportunity to study at an undergraduate level, enhancing their understanding beyond traditional classroom-based science lessons. The participants will learn through a variety of techniques such as debates, case studies and many opportunities to ask questions.

The primary objective is to equip participants with a deep understanding of the complex natural world. The curriculum encompasses a broad spectrum of topics, including evolution, microbiology, geology, environmental chemistry, and neuroscience, among others. Students will leave inspired and motivated to continue their study at a higher level.



Evolution and Biodiversity

In this topic, participants will delve into the intricate world of biodiversity and evolution. From the process of natural selections to the classification of species, participants will explore how life has diversified and adapted to various environments over millions of years. By examining real-world examples and engaging in the most topical debates on the topics, participants will gain a deeper understanding of the mechanisms driving the evolution of life on Earth.

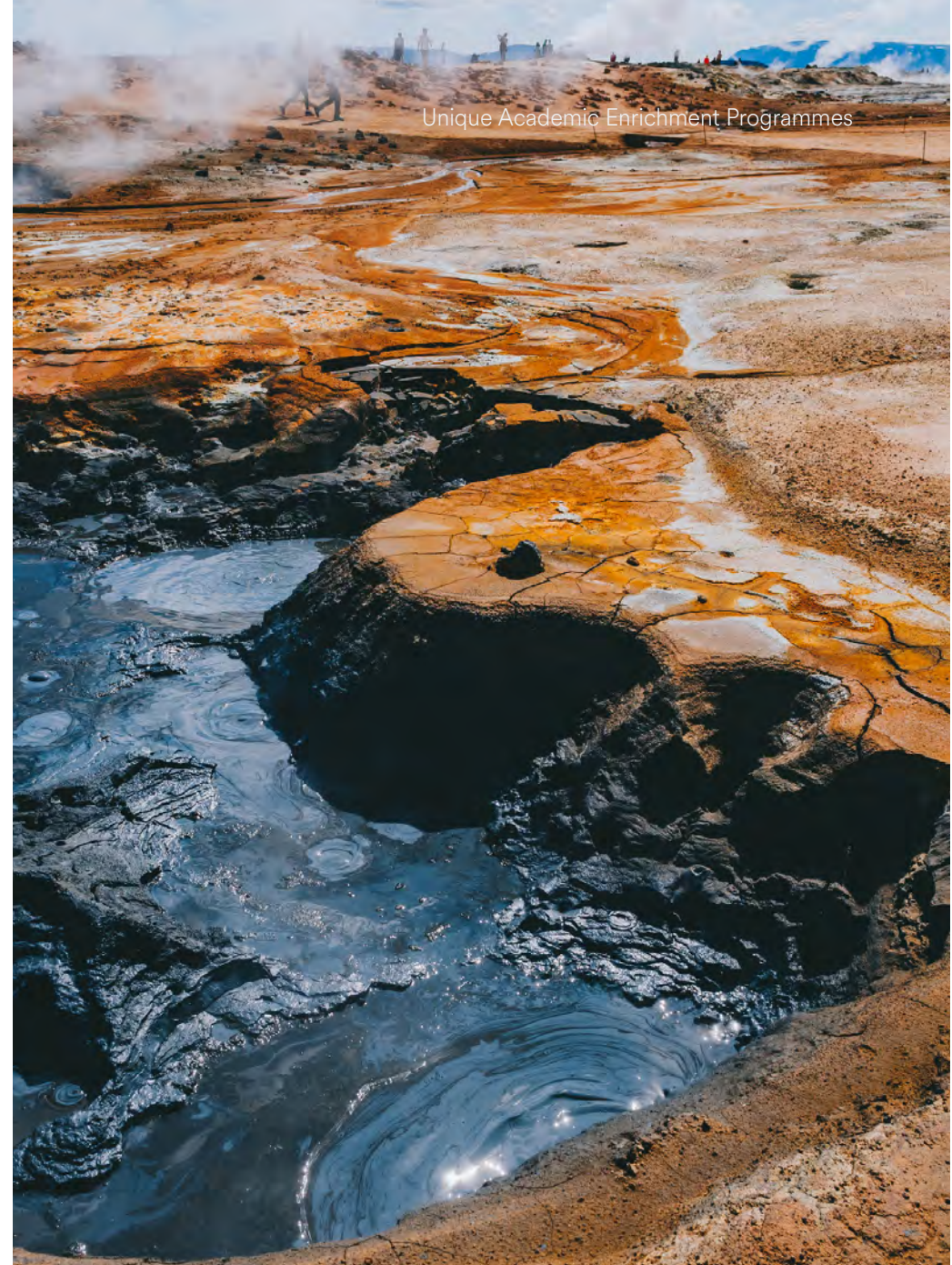
Microbiology and Cell Biology

Participants will journey into the realm of microscopic life and cellular structures. Through the study of microbiology and cell biology, participants will uncover the fascinating world of microorganisms, their role in ecosystems, and their impact on human health. By observing microscope slides, participants will gain practical insights into the building blocks of life and the hidden intricacies of the microbial world.



Geology and Earth Science

Exploring the dynamic forces that have shaped the Earth over geological time scales is an essential element of Natural Sciences. From plate tectonics and rock formations to geological hazards, participants will gain insights into the processes that have sculpted our planet's landscape. Through interactive simulations and using data from sophisticated analytical techniques such as mass spectrometry, participants will unravel the geological history of Earth and its influence on the natural world.

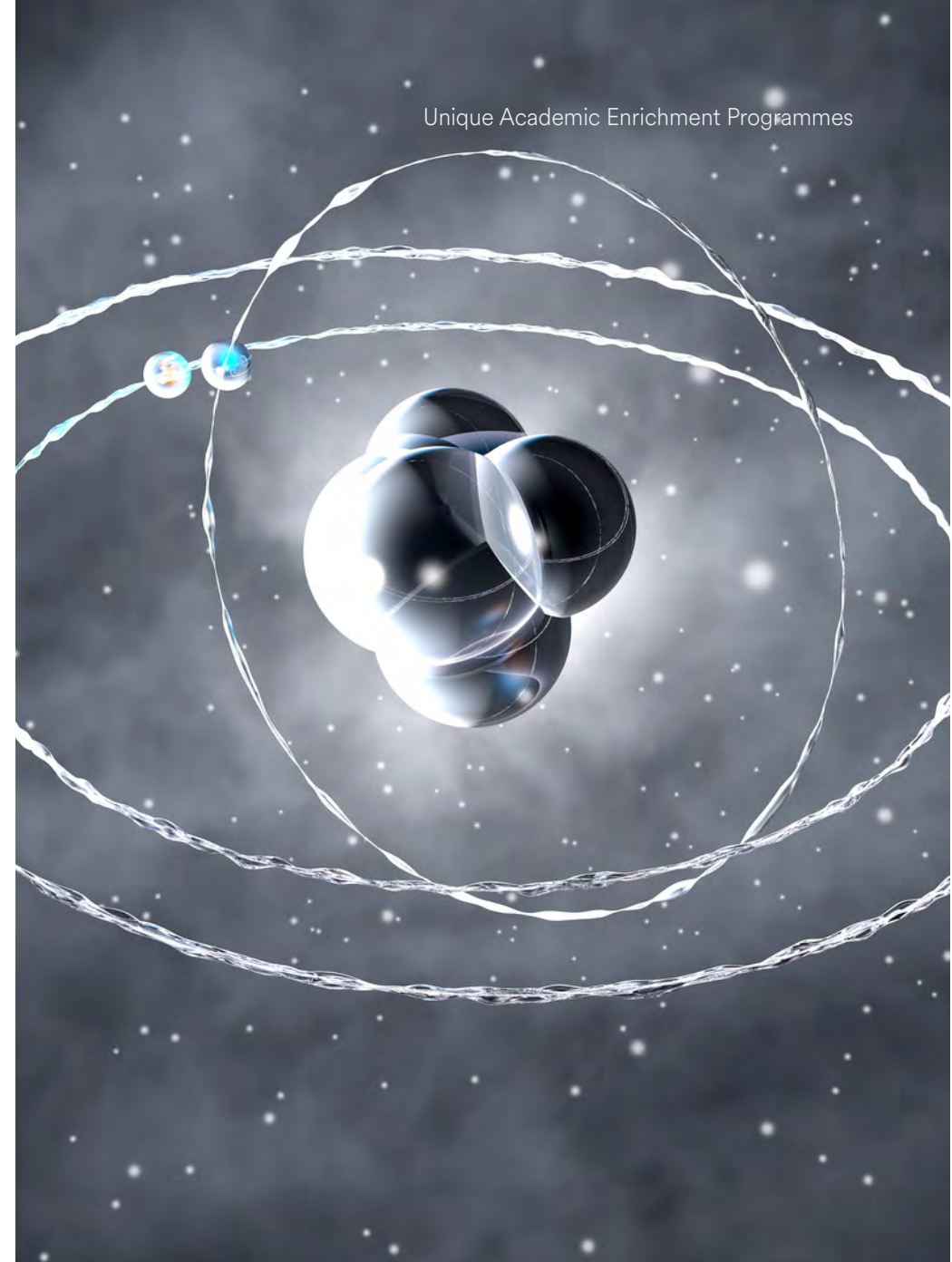


Environmental Chemistry and Sustainable Solutions

This topic will focus on the intersection of chemistry and the environment. Participants will investigate topics such as pollution, climate change, and sustainable technologies. By examining the chemical processes that occur in natural systems and their impact on the environment, participants will explore ways to address environmental challenges through innovative and sustainable solutions. Through experimentation and data analysis, participants will gain a deeper appreciation for the role of chemistry in creating a more sustainable future.

Quantum Mechanics and Astrophysics

The class will dive into the realm of physics that operates beyond our everyday experiences. Through the exploration of quantum mechanics and astrophysics, participants will unravel the mysteries of the universe at both the smallest and largest scales. From the behavior of subatomic particles to the dynamics of galaxies, participants will engage in thought experiments and group activities to deepen their understanding of the fundamental laws governing the cosmos.



Fundamentals of Pharmacology: Health and Disease

Participants will advance their knowledge of the normal structure and function of human cells at a molecular, cellular and tissue level. They will develop knowledge of the differences between bacterial, viral and fungal cells. Participants will have the opportunity to ask and answer questions and delve into the principles of infection mechanisms. Finally participants will explore concepts of drug action within living systems.



Science and Technology Studies

The main aim of this topic is to understand the impact that science and technology have on society, a subject which is becoming more relevant for study and to society as a whole. Students will focus on the risks, benefits and opportunities that science and technology may pose to democracy, human values, environmental sustainability and security. We will use a variety of case studies to form a good understanding of Science and Technology Studies.

Unique Academic Enrichment Programmes





Neuroscience and Cognitive Science

Participants will delve into the intricate workings of the human brain and the mysteries of consciousness. Participants will explore topics such as neural networks, brain function, and cognitive processes. By examining the latest advancements in neuroscience and engaging in interactive exercises, participants will gain insights into how the brain shapes human behavior, perception and decision making.



OUR AWARDS AND ACCREDITATIONS



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