Hong Kong Shue Yan University
Minor Programme

Department of Applied Data Science

Minor Programme Offered: Minor in Applied Data Science

(Available for Year 1 Entry: 2025 cohort onwards; Year 2 Entry: 2026 cohort onwards; Year 3 Entry: 2027 cohort onwards)

1) Students are required to complete a minimum of 15 credits consisting of 2 compulsory courses and 3 elective courses:

Course List			
Course Code	**Course Title**	**Credits**	**Pre-requisite(s)**
Core Courses			
ADS100	Introduction to Data Science	3	NIL
ADS210	Digital Humanities: Theories and Methods	3	NIL
Electives Courses (Choose 3 courses in total out of the following 2 categories)			
Technical Data Science Electives (Choose at least 1 course out of 7)			
ADS151 #	Python for Data Science	3	NIL
ADS230	Introduction to Database Systems	3	NIL
ADS370	R for Data Science	3	NIL
ADS360	Computational Thinking	3	NIL
ADS320 #	Introduction to Data Mining	3	NIL
Applications of Data Science Electives (Choose at least 1 course out of 7)			
ADS250 #	Introduction to Data Visualization and VR/AR	3	NIL
ADS330	Social Media Data Analytics	3	ADS151 ADS230
ADS340	Big Data Ecosystem	3	NIL
ADS430	Data Science Ethics	3	NIL
ADS480	Cloud Computing	3	ADS100

Remark: The course list is subject to change without prior notice.

#Students may apply for double counting of overlapping courses up to 6 credits if they have completed the following course in their Majors:

Elective Courses in Minor in ADS	Equivalent Courses offered by other Departments
ADS151: Python for Data Science	FINT200: Fundamentals of Fintech Computing
ADS250: Introduction to Data Visualization and VR/AR	MDIT220: Understanding VR/AR (Unity 1 & Unreal 1)
ADS320: Introduction to Data Mining	SOC434: Mining Data for Social Research

DESCRIPTION OF COURSES (MINOR IN ADS)

ADS 100   Introduction to Data Science

1 Term; 3 Credits

This course serves as a foundational entry point into the field of data science. It encompasses fundamental concepts such as data collection, data cleaning, exploratory data analysis, and basic statistical techniques. Students will participate in hands-on projects that enable them to apply these concepts using real-world datasets. By the conclusion of the course, students will be well-equipped to comprehend the data science workflow and its applications in various contexts.

ADS 151   Python for Data Science

1 Term; 3 Credits

This course introduces students to Python programming, with a focus on its applications in data analysis and visualization. Students will learn to utilize libraries such as Pandas, NumPy, and Matplotlib to manipulate data and produce informative visualizations.

ADS 210   Digital Humanities: Theories and Methods

1 Term; 3 Credits

This course examines the intersection of digital technology and the humanities, emphasizing how data science methodologies can enhance research in disciplines such as literature, history, and cultural studies. Students will explore both qualitative and quantitative methods in the humanities, including text analysis and data visualization. The course aims to illustrate the applicability of data science skills in enriching critical analysis and interpretation of cultural artifacts.

ADS 230   Introduction to Database Systems

1 Term; 3 Credits

This course provides an overview of database systems, covering fundamental concepts such as data modelling, database design, and SQL. Students will learn how to interact with databases and manage data effectively.

ADS 250   Introduction to Data Visualization and VR/AR

1 Term; 3 Credits

This course introduces the principles of effective data visualization and explore technologies such as virtual reality (VR) and augmented reality (AR) for data presentation. The course will emphasize the art of storytelling through data and highlight the significance of visual communication.

ADS 320   Introduction to Data Mining

1 Term; 3 Credits

This course introduces students to data mining techniques and their applications across various fields. Students will learn key concepts such as classification and clustering while gaining proficiency in relevant software and programming languages to analyse and interpret complex datasets effectively.

ADS 330   Research Methods and Data Analytics

1 Term; 3 Credits

This course explores the role of data analytics in understanding social media dynamics. Students will analyse social media data to derive insights into user behaviour, trends, and effective engagement strategies.

ADS 340   Big Data Ecosystem

1 Term; 3 Credits

This course introduces the components of the big data ecosystem, including data storage technologies, processing frameworks, and analytics tools. This knowledge is essential for understanding how organizations utilize big data for strategic decision-making.

ADS 360   Computational Thinking

1 Term; 3 Credits

This course fosters students' problem-solving skills through the lens of computational thinking. It emphasizes algorithmic reasoning and the application of computational methods to address complex problems across various fields.

ADS 370   R for Data Science

1 Term; 3 Credits

This course focuses on R programming, another widely utilized language in data analysis. Students will engage with statistical techniques and data visualization, equipping them to manage data in various formats and apply statistical methods effectively.

ADS 430   Data Science Ethics

1 Term; 3 Credits

This course will address topics such as data privacy, algorithmic bias, and the social responsibilities of data scientists.

ADS 480   Cloud Computing

1 Term; 3 Credits

This course introduces students to the concepts and technologies of cloud computing, with an emphasis on how cloud services can enhance data storage, processing, and analysis. Students will explore various cloud platforms, deployment models, and the implications of cloud computing for data science applications.