

BSc (Hons) in Language Sciences and Analytics with a Secondary Major in Artificial Intelligence and Data Analytics (AIDA)

Programme Code	72425-XAA
Credit Required for Graduation	132 relevant credits plus 3 training credits
Programme Leader	Prof. KWONG Yee Lan, Elaine Email: elaine-yl.kwong@polyu.edu.hk

Programme Overview

Bachelor of Science (Honours) in Language Sciences and Analytics (BScLSA)

The BScLSA programme aims to (1) train language and knowledge professionals for our information-rich and highly connected world and the era of digital humanities; (2) endow our graduates with highly sophisticated communication skills, especially in terms of culture and domain sensitivity in intercultural and corporate communication; inter-personal skills and empathy in face-to-face communication as well as over digital media; and being technologically savvy to master current and future new media, (3) equip our graduates with general knowledge of the underlying concepts and profession-specific literacy and skills in linguistics and bilingual communication, (4) equip our graduates with competence in utilizing analytic tools, performing and presenting quantitative analyses on language data, and extracting useful information from large-scale language datasets with complex scales, and (5) equip our graduates with the ability to create, adapt, and utilize language-related applications and tap into advances in artificial intelligence research.

Secondary Major in Artificial Intelligence and Data Analytics (AIDA)

The Secondary Major in AIDA is designed in response to the rapidly developing fields of artificial intelligence and data analytics that are currently gaining unprecedented traction in industry as well as generating demand for qualified professionals in the job market. By integrating within the major discipline of the student, this secondary major aims to produce the next generation of graduates skilled with AI computational thinking and data analytics acumen in their chosen discipline to meet the needs of society, help improve efficiencies and augment human capabilities.

BScLSA with a Secondary Major in AIDA programme will incorporate a block of AIDA subjects (such as programming, mathematics, statistics, big data, AI and machine learning) into the study of BScLSA.

Entrance Requirements

To be eligible for a Secondary Major, you must have a cumulative GPA of 2.70 or above at the time of application for Secondary Major enrolment.

The Secondary Major application period normally begins after the announcement of overall results for Semester Two of Year One. Your CGPA at the end of Semester Two of Year One will be used to determine your eligibility. If you are interested in pursuing a Secondary Major, please submit your

application via eStudent > Application Forms > (AR164) Application for Major/Secondary Major/Double Major during the designated application period.

For details of the requirements of the Secondary Major in AIDA, please visit <https://www.polyu.edu.hk/comp/study/ug-programmes/aida/curriculum/>.

Programme Structure

Credit Requirement

A BScLSA award with a Major in BScLSA and a Secondary Major in Artificial Intelligence and Data Analytics (AIDA) requires the accumulation of a minimum of **132 relevant credits plus 3 training credits**. In addition to the **27 GUR credits**, students need to complete (1) **84 Major credits plus 3 training credits** (with at least 21 credits being level-4 subjects) and (2) 36 credits from the AIDA subject list¹. Of these 36 credits, 30 credits are core subjects and 6 credits are elective subjects.

Some subjects are shared between BScLSA and the Secondary Major in AIDA, and students may count up to 12 credits of BScLSA subjects towards AIDA. Please refer to the subject list below for details.

The list of compulsory and elective subjects for the Major is almost the same as that for the existing BScLSA programme. The only difference is in the Capstone Project, as students complete an integrated project (involving both BScLSA and AIDA) instead of the regular BScLSA route. The minimum credit requirement of BScLSA + AIDA is 135 credits (132 relevant credits plus 3 training credits).

Subject List

Category	Subject Code	Subject Title	No. of Credit	Double Counting
<i>Compulsory Subjects</i>				
Core (Mathematics I for AIDA)	AMA1501	Introduction to Statistics for Business	3	Yes
Core (Mathematics II for AIDA)	AMA1751	Linear Algebra	3	
Core (Programming I: Programming Fundamentals)	COMP1012	Programming Fundamentals and Applications	3	
Core (Programming II: Data Structures and Algorithms)	COMP2013/DSAI2201	Data Structures and Algorithms	3	
Core (Fundamentals of Data Analytics)	AMA1611/DSAI1102 OR COMP1433/DSAI1201	Data Analytics Fundamentals OR Introduction to Data Analytics	3	Yes (COMP1433/DSAI1201)
Core (Machine Learning)	COMP4432/DSAI4203	Machine Learning	3	
Core (Artificial Intelligence)	COMP4431	Artificial Intelligence	3	Yes
Core (DSR-AIDA Bridging Subject(s))	CBS3947	Programming and Data Analysis for Language Studies	3	Yes

¹ At least 50% of the subjects should be at Level 3 or above.

Category	Subject Code	Subject Title	No. of Credit	Double Counting
Core (Integrated Capstone Project)	CBS4705	Integrated Capstone Project	6	
<i>Elective Subjects</i>				
Electives	AAE4009	Data Science and Data-driven Optimisation in Airline and Airport Operations	3	
Electives	AAE4011	Artificial Intelligence in Unmanned Autonomous Systems	3	
Electives	AMA3201	Computational Methods (Pre-requisite: AMA2007 / AMA2008 / AMA2111 / AMA2308 / AMA2380 / AMA2512 / AMA2882 / AMA290 / AMA3001)	3	
Electives	AMA3602	Applied Linear Models for Finance Analytics (Exclusion: AMA2631 / AMA2631A)	3	
Electives	AMA3640	Statistical Inference (Pre-requisite: AMA2007 / AMA2111 / AMA2308 / AMA2703 / AMA2703A / AMA273 / AMA2882 & AMA1501 / AMA1502 / AMA2104 / AMA2601 / AMA2601A / AMA2634 / AMA2634A / AMA2691)	3	
Electives	AMA3820	Operations Research Methods (Pre-requisite: AMA1007 / AMA1008 / AMA1101 / AMA1102 / AMA1120 / AMA1130 / AMA2007 / AMA2111 / AMA2701 / AMA2701A / AMA2703 / AMA2703A / AMA2308 / AMA2380 / AMA2512 / AMA2882 / AMA290)	3	
Electives	AMA4602	High Dimensional Data Analysis (Pre-requisite: AMA2602 / AMA2631 / AMA2631A / AMA2691)	3	
Electives	AMA4650	Forecasting and Applied Time Series Analysis (Pre-requisite: AMA2602 / AMA2631 / AMA2631A / AMA364 / AMA4001)	3	
Electives	AMA4670	Modelling of Epidemic and Pandemic (Pre-requisite: AMA2691 / AMA2702)	3	
Electives	AMA4688	Simulation (Pre-requisite: AMA1501 / AMA1502 / AMA2104 / AMA2601 / AMA2634 / AMA2634A / AMA2691)	3	
Electives	AMA4840	Decision Analysis (Pre-requisite: AMA1501 / AMA1502 / AMA2104 / AMA2601 / AMA2634 / AMA2634A / AMA2691)	3	
Electives	AMA4850	Optimization Methods	3	

Category	Subject Code	Subject Title	No. of Credit	Double Counting
		(Pre-requisite: AMA2007 / AMA2111 / AMA2112 / AMA2308 / AMA2380 / AMA2882 / AMA3001)		
Electives	AP40012	Machine Learning in Physics (Pre-requisite: AP20005)	3	
Electives	AP40013	Energy Conversion and Storage with Machine Learning (Pre-requisite: AP20002)	3	
Electives	BME44144	AIDA for Biosignal Processing and Medical Imaging (Pre-requisite: BME31116)	3	
Electives	BME34145	AIDA for Health Care and Smart Ageing (Pre-requisite: ENG2002) Programme code changed from BME44145	3	
Electives	BRE368	AI and Data Analytics for Smart Construction	3	
Electives	BSE458	Building Performance Diagnosis and Management [Pre-requisite: BSE3514 (before 2022/23 cohort) / BSE3515 (from 2022/23 cohort)]	3	
Electives	BSE4610	Building Informatics (Pre-requisite: BSE1610 & BSE2610 & BSE3227)	3	
Electives	CBS3410	Python for Language Analytics (Pre-requisite: CBS3947)	3	
Electives	CBS4702	Advanced Topics in Quantitative Language Studies (Pre-requisite: CBS3947)	3	
Electives	CBS4703	Social Media and Social Network Analysis	3	
Electives	CBS4704	Workshop on Language Analytics (Pre-requisite: CBS4958)	3	
Electives	CBS4844	Machine Aided Translation	3	
Electives	CBS4954	Statistics for Language Studies	3	
Electives	CBS4958	Fundamentals of Computational Linguistics (Pre-requisite: CBS3947)	3	
Electives	CBS4962	Corpus and Language Technology for Language Studies (Pre-requisite: CBS1902)	3	
Electives	COMP4434/DSAI4205	Big Data Analytics (Pre-requisite: AMA1104 / AMA1110 & COMP1011 / COMP1012 / ENG2002 & COMP2011 / COMP2013 / DSAI2201)	3	
Electives	COMP4442	Service and Cloud Computing (Pre-requisite: COMP2421 & COMP4232)	3	
Electives	COMP4436	Artificial Intelligence of Things (Pre-requisite: COMP1011 / COMP1012 / ENG2002)	3	
Electives	CSE30313	Machine Learning Practice in Smart Mobility (Pre-requisite: One basic mathematics subject and one basic computer programming subject <u>Mathematics</u>)	3	

Category	Subject Code	Subject Title	No. of Credit	Double Counting
		AMA2007 / AMA2111 / AMA2131 / AMA2308 / AMA2707 / AMA290 <u>Computer Programming</u> AMA2222 / AMA2222A / COMP1011 / COMP1012 / ENG2002)		
Electives	EE3013B	Transportation Data Analytics (Pre-requisite: EE2029B)	3	
Electives	EE4014A	Intelligent Systems Applications in Electrical Engineering	3	
Electives	EIE4121	Machine Learning in Cyber- security	3	
Electives	EIE4122	Deep Learning and Deep Neural Networks (Pre-requisite: AMA2104/ EIE3124)	3	
Electives	ENGL4022	Quantitative Literacy for Language Professionals	3	
Electives	ENGL4026	Language and Social Data Analytics	3	
Electives	HTI3990	Big Data Analytics for Bioinformatics and Genomic Medicine	3	
Electives	HTI4990	AIDA in Clinical Diagnosis and Radiotherapy	3	
Electives	HTM4350	Big Data Analytics in Hospitality, Tourism and Events (Pre-requisite: HTM3205)	3	
Electives	HTM4364	Social Media and Digital Marketing Analytics (Pre-requisite: HTM2324)	3	
Electives	ISE3017	Applied AIDA in Operations Research and Management	3	
Electives	ISE3011	Applied Quality and Reliability with AIDA	3	
Electives	SFT403FI	Smart Textiles for Wearable Applications	3	
Electives	SFT412FB	Fashion Market Intelligence	3	
Electives	SFT303AF	AI in Fashion Business	3	
Electives	LSGI3220	Building Information Modelling & 3D GIS	3	
Electives	LSGI3801	GeoAI	3	
Electives	LSGI3802	Spatial Data Science	3	
Electives	LSGI3803	Spatial Data Analytics and Mining (Pre-requisite: AMA1751 & COMP1011 / COMP1012)	3	
Electives	LSGI3804	Urban Big Data Analytics	3	
Electives	LSGI3805	Urban Sensing for Smart City	3	
Electives	LSGI3220	Building Information Modelling & 3D GIS	3	
Electives	ME41006	Perceptual Robotics (Pre-requisite: ME31002)	3	
Electives	ME42001	Artificial Intelligence in Products (Pre-requisite: ME31002 / ME41004)	3	
Electives	ME42011	Fundamentals of Robotics (Pre-requisite: ME31002 / ME41004)	3	
Electives	SD4772	Interactive Media and Marketing	3	

Remarks: The subject offer arrangement will be reviewed and adjusted when needed.

For further details of the programme requirements, please refer to the PRD [[link](#)].

Indicative Progression Pattern

Suggested Semester	Code	Subject	Credit	Compulsory/ Elective
Year 2				
1 or 2	AMA1501	Introduction to Statistics for Business	3	Compulsory
1 or 2	AMA1751	Linear Algebra	3	Compulsory
1	COMP1012	Programming Fundamentals and Applications	3	Compulsory
2	DSAI2201 (Pre-requisite: COMP1012)	Data Structures and Algorithms	3	Compulsory
OR	OR	OR		
1 or 2	DSAI1102/ DSAI1201	Data Analytics Fundamentals/ Introduction to Data Analytics		
Year 3				
1	DSAI2201 (Pre-requisite: COMP1012)	Data Structures and Algorithms	3	Compulsory
OR	OR	OR		
1 or 2	DSAI1102/ DSAI1201	Data Analytics Fundamentals/ Introduction to Data Analytics		
1 or 2	DSAI4203	Machine Learning	3	Compulsory
1 or 2	COMP4431 (Pre-requisite DSAI2201)	Artificial Intelligence	3	Compulsory
2	CBS3947	Programming and Data Analysis for Language Studies	3	Compulsory
Year 4				
1 and 2	CBS4705	Integrated Capstone Project	6	Compulsory
1 or 2	XXXX	Elective 1	3	Elective
1 or 2	XXXX	Elective 2	3	Elective
Year 2 to 4		Total	36	

Enquiries

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(March 2026)