THE HONG KONG POLYTECHNIC UNIVERSITY
香港理工大學

Department of Computing
電子計算學系

Bachelor of Science (Honours) Scheme in
COMPUTING AND AI
(2024/25)

SHAPING AND TRANSFORMING THE FUTURE WITH COMPUTING

JUPAS CODE: JS3868

BSc (Hons) in COMPUTER SCIENCE

Bachelor of Science (Hons) in COMPUTER SCIENCE

Objectives

We offer the **BSc (Hons) Scheme in Computing and AI** that includes 3 different major degree programmes with diversified scopes of curriculum design for students to select the most suitable one for themselves in the second year of study.

The **BSc (Hons) in Computer Science** programme emphasises on applying computing theories and programming methodologies to design and develop computer systems and software.

Features

- Unique common first year with flexible programmes to choose
- Choice of minor in other departments or faculties
- Up to 32-week internship option/ Work-Integrated Education (WIE)
- Overseas exchange and international learning opportunities
- Professional Training/ Certification Programmes
- Mentorship Programmes

Career Prospects & Further Studies

Our graduates started their career in a wide range of job positions, such as Data Scientist, System Analyst, Game Developer and Software Engineer/ Architect. Others pursue further studies either in our department or reputable universities overseas, e.g. ETH Zürich, Carnegie Mellon University, the University of Illinois at Urbana–Champaign, the University of Toronto, the University of Southern California, The University of Edinburgh, and Monash University.

Internship & Work-Integrated Education (WIE)

Our students have gained valuable work experience at international companies and government bodies such as Hong Kong Monetary Authority, Hospital Authority, HSBC, IBM, Microsoft and ASTRI. Some undertake international WIE in overseas countries such as the US, Canada, the Netherlands, France, Germany, Denmark, Switzerland, Spain, Japan and Singapore to broaden their cross-cultural understanding.
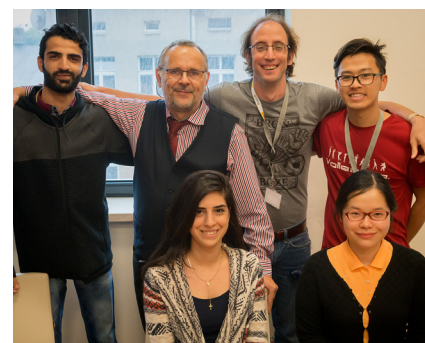
Curriculum

Year of Study	Core Subjects Highlight
Year 1	• Computational Thinking and Problem Solving • Programming Fundamentals • Introduction to Computer Systems • Introduction to Data Analytics
Year 2	• Data Structures • Discrete Mathematics • Object-oriented Programming • Database Systems • Computer Networking • Computer Organization • Operating Systems
Year 3	• Software Engineering • Human-Computer Interaction • System Programming • Computer Systems Security
Year 4	• Capstone Project

Electives in the Stream of AI & Big Data

- Business Intelligence and Customer Relationship Management
- Knowledge and Information Management
- Computer Vision
- Artificial Intelligence
- Machine Learning
- Data Mining and Data Warehousing
- Big Data Analytics
- Artificial Intelligence of Things

Electives in the Stream of Systems & Infrastructures

- Database Security
- Web Application Design and Development
- Internetworking Protocol, Software and Management
- Mobile Security: Principles and Practice
- Principles and Practice of Internet Security
- Mobile Computing
- Service and Cloud Computing
- Artificial Intelligence of Things

Electives in the Stream of Computing Theory & Analytics

- Design and Analysis of Algorithms
- Theory of Computation
- Machine Learning
- Big Data Analytics
- Computational Methods
- Numerical Methods and Computing
- Simulation

Student Development

Outbound Exchange

Undergraduate Summer Research Abroad Sponsorship Scheme (USRA)

A signature student learning scheme, which aims to provide financial support to students to undertake research under the guidance of academics in overseas pre-eminent universities, including the University College London (UCL) and Massachusetts Institute of Technology (MIT).

Mentorship Programmes

We have invited alumni, professional practitioners and business executives from Computing Alumni Association and the industry to join us as mentors, enabling our students to know more about workplace culture, business trends and prospects in established professions, widening their exposure to different career paths and options.

Extra-Curricular Activities

We encourage students to broaden their horizons by taking part in international and regional competitions as well as local and overseas Service-Learning projects. Other out-of-classroom activities such as workshops and seminars are also organised for students.

Training/ Certification Programme (TCP)

We collaborate with various organisations to integrate tertiary education with professional training/ certification. Students are provided with practical knowledge and skills, thus equipping themselves with extra-curricular guidance to strengthen their employability.

Entrance Requirements

We accept students from all backgrounds - arts, science, or business. Our Scheme in Computing and AI has the same entrance requirements as other programmes in PolyU. They are:

For Entry with HKDSE Qualifications

Four core subjects and two elective subjects with:

Level 3 - English Language **Level 3** - Elective^

Level 3 - Chinese Language **Level 3** - Elective^

Level 2 - Mathematics **Attained** - Citizenship and Social Development

^M1/ M2 are also considered as electives

Preferred subjects include English, Mathematics, Extended Modules of Mathematics (M1/ M2), Information and Communication Technology (ICT), Physics/ Biology/ Chemistry (Single or Combined Science), Business, Accounting and Financial Studies (BAFS), and Economics.

Apply via JUPAS (Joint University Programmes Admissions System):
www.jupas.edu.hk

Alternative Entry Route

a) An appropriate Diploma passed with credit or a Higher Certificate from a recognised institution;

OR

b) An appropriate Associate Degree/ Higher Diploma from a recognised institution (suitable candidates will be considered for advanced standing entry to the senior year curriculum);

OR

c) Holder of other non-local qualifications (please refer to PolyU's Guidelines on Non-local Qualifications for more details about our general requirements) AND satisfy the English Language Requirement.

Apply via Non-JUPAS:
www.polyu.edu.hk/study