Mathematics

Programme Introduction

Curriculum

There is both breadth and depth to our curriculum. Students can choose from a wide range of courses according to their interests, abilities, and career aspirations.

Students majoring in Mathematics can graduate in one of our 7 streams of study. For instance, the Enrichment Stream is specially designed to train professional mathematicians, while the Computational and Applied Mathematics (CAM) Stream and Computational Big Data Analytics Stream further increase the breadth of knowledge and emphasizes the ability to apply mathematics for real life problems.

Further information is available on the department website: https://www.math.cuhk.edu.hk/undergraduates/streams

UROP <u>U</u>ndergraduate <u>R</u>esearch <u>O</u>pportunity <u>P</u>rogram

UROP aims to provide opportunities for undergraduate students (including both math major and potential major) to get first-hand experiences in carrying out academic research related to pure and applied mathematics.

Each selected student will get involved in a research project under the supervision of a professor/lecturer in the department. The research projects will be of very broad interests, for example, reviewing the literature, giving presentations to help a research group under the supervisor to understand some related mathematics concepts, helping with some calculations, derivations or algorithmic implementations.

All UROP participants will be supported financially by the department as student helpers. At the end of the program, UROP participants will give presentations about their research projects, and awards will be given based on their performance in the entire project.

COSINE <u>C</u>hina and <u>O</u>verseas <u>S</u>tudy, <u>I</u>nternship and <u>E</u>xchange Program

In developing our students' potential, we have organized summer research, work and exchange opportunities under various names since the founding of the Department.

Competition for placement is fierce, so ask questions and get prepared early. Our advisors are very willing to help you make the most out of your mathematical studies, so that you could keep a good track record for the career path you would like to pursue.

In general, students with good conduct and academic records are eligible to apply. Successful applicants may apply for financial support for summer programmes outside Hong Kong.

Past Opportunities

Summer Research

1. Caltech (in USA)
2. The Chinese University of Hong Kong
3. Cornell University (in USA)
4. Johns Hopkins Medical School (in USA)
5. Oak Ridge National Laboratory (in USA)
6. Shanghai Institute of Biological Sciences (in China)
7. University of Chicago (in USA)
8. University of Delaware (in USA)
9. University of California, Irvine (in USA)
10. University of California, Los Angeles (in USA)
11. University of Waterloo (in Canada)
12. University System of Taiwan

Summer Schools and Workshops

1. Yau Mathematical Sciences Center (YMSC) in Tsinghua University
2. Institute of Mathematics, Academia Sinica (in Taipei)
3. 應用數學暑期學校，北京大學
4. 非線性偏微分方程暑期講習班
5. The International Congress of Chinese Mathematicians (ICCM) 2019 in Tsinghua University
6. 2018 年數學拔尖學生聯合暑期學校，廈門大學
7. 2018 國際人工智能暑期學校，哈爾濱工業大學

Industrial Internship Opportunities

1. Celestial Asia Securities Holdings Limited (CASH Group)
   - Research analyst in algorithmic trading team
   - Business development of mobile trading services
2. ClusterTech Limited
   - Summer intern at advanced clustering technologies team
3. Silverhorn Investment Advisors Limited
   - Summer intern

Educational Internship Opportunities

1. Times Publishing (Hong Kong) Limited
   - Textbook editors
2. Hong Kong Educational Publishing Company
   - Textbook editors
3. The Commercial Press (Hong Kong) Ltd.
   - Editorial assistant
4. CCC Mong Man Wai College
   - Classroom teaching positions
5. Christ College
   - Classroom teaching positions
6. Li Kau Yan Memorial School
   - Classroom teaching positions

Scholarships

On average, more than 80 Mathematics Scholarships (amounting to more than 1 million dollars) are awarded each year, including:

1978 Mathematics Alumus Li Sze-lim Scholarships
Department of Mathematics Exemplary Student Award
Dr. Chao Yong Chi-hsing Mathematics Scholarship
Student Development Scholarship for Mathematics Undergraduates
Tsou Shou Town Scholarship
Undergraduate Mathematics Scholarship

Details of Department Scholarships are posted under Scholarships on the department website.

Career Path

On completion of this degree, graduates should have acquired good mathematical knowledge and skills for their further studies and/or careers. Recent past graduates have started careers in professions including:

❋ Banking
❋ Computer Science
❋ Data Science
❋ Engineering
❋ Education
❋ Information Technology
❋ Quantitative Finance

Further studies

Every year, a significant proportion of our graduates pursue further studies abroad, in prestigious graduate programmes such as those at the following universities:

❋ Princeton University
❋ Harvard University
❋ Massachusetts Institute of Technology
❋ University of California, Berkeley
❋ Stanford University
❋ University of Cambridge
❋ University of Oxford

They are typically fully supported in these programmes through scholarships, fellowships and teaching assistantships.