Programme in Computing Mathematics
計算數學課程

Dr K W Chung
Major Leader (BSCM)
Department of Mathematics

Mission

The Department has strong mission to provide high quality education in mathematics and conduct first-class research in applied mathematics.
**48 credit units of Core courses:**

**Level - B2**

- Computing Mathematics Laboratory
- Discrete Mathematics
- Linear Algebra
- Multi-variable Calculus
- Probability and Statistics
- Java Programming
- Data Structures and Data Management

**Levels - B3 and B4**

- Analysis
- Applied Statistics
- Complex Analysis
- Introduction to Optimization
- Ordinary Differential Equations
- Partial Differential Equations
- Elementary Numerical Methods
- Numerical Methods for Differential Equations
18 credit units of Major Electives:

**Level – B1**
- Algebra
- Coordinate Geometry

**Levels – B3 and B4**

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<th>Level B3</th>
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<td>• A Mathematical Introduction to Machine Learning for Data Sciences</td>
<td>• Introduction to Functional Analysis</td>
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<td>• Applied Differential Geometry</td>
<td>• Introduction to Abstract Algebra</td>
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<td>• Applied Mathematics Laboratory</td>
<td>• Introduction to Differential Manifolds</td>
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<td>• Asymptotic Analysis</td>
<td>• Introduction to Machine Learning for Data Sciences</td>
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<td>• Computational Geometry</td>
<td>• Introductory Mathematical Finance</td>
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<td>• Introduction to Actuarial Science</td>
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<td>• Introduction to Dynamical Systems and Chaos</td>
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<td>• Introduction to Finite Element Method</td>
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<td>• Project</td>
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<td>• Real Analysis</td>
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<td>• Sampling Survey Methods for Social and Market Research</td>
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Minors

- Applied Psychology
- Business Economics
- Business Intelligence
- Computing
- Finance
- Physics
- Psychology
CityU-Columbia University Joint Bachelor's Degree Programme

Students who join this program need to study in CityU for the first two years and continue in Columbia University for the third and fourth years.
Cross Institutional Course Enrollment Scheme with HKBU

- Students from one university can take the courses offered by the partner university.

- In 2019/20, 21 MA students from CityU and nine from HKBU joined the scheme.
Off-campus Training for Mathematics Students

The IAS is a summer training programme that lasts from June till August for students who have completed their third-year studies.

The following organizations offered placements in recent years:

- Agriculture, Fisheries and Conservation Department, HKSAR Government (Fisheries Branch)
- Atos Origin
- Chinese Estates Holdings Limited
- Econux (Asia) Limited
- Frontier Research and Technology Ltd
- Hong Kong Observatory
- Nova Credit Limited
- Ocean Park Corporation
- PricewaterhouseCoopers
- Taifook Asset Management Limited
- VHSoft Technologies Company Limited
- Xi’an Tech Full Simo Motor Company Limited
Overseas Internship Scheme (OIS)

The OIS is a summer internship for year-3 students.

The following universities/company offered placements in recent years:

- University of Cambridge, UK
- University of Southampton
- University of Surrey, UK
- University of Portsmouth, UK
- University of California, USA
- University of Tennessee/ORNL, USA
- The Banff Centre, Film and Media, Canada
- Polytech Montpellier, France
- CTTC Fundació Centre Tecnològic de Telecomunicacions de Catalunya, Spain
- Tampere University of Technology, Finland

In the summer of 2019, nine MA students joined the OIS.
Student Exchange Programme

Students can broaden their horizon by studying in overseas universities for a semester:

- Purdue University, USA
- Peking University, PRC
- Trinity College Dublin, The University of Dublin, Ireland
- Technical University of Denmark, Denmark
- U Montpellier 2 Sci et Tech, France

In 2018/19, six BSCM students joined the Student Exchange Programme.
Student Achievement

Our BSCM students obtained different prizes in various competitions during 2018/2019:

- Second Prize in the Contemporary Undergraduate Mathematical Contest in Modeling (CUMCM)
- Awarded Top Quartile Certificate in Simon Marais Mathematics Competition (SMMC)
Career Prospects

Our graduates secure jobs in a number of fields including quantitative business planning, data analysis, mathematical modeling, scientific programming, logistics and communications. There is also a demand for mathematics teachers in secondary schools.
Further studies of graduates in recent years:

**Canada**
- University of Calgary
- University of Toronto

**UK**
- University of Oxford
- University of Cambridge
- Imperial College London
- University College London
- The London School of Economics and Political Science

**USA**
- Harvard University
- Courant Institute of Mathematical Sciences, New York University
- University of California, Berkeley
- University of Chicago
- Columbia University
Thank you!