The academic programmes administered by the Department are as follows:

- MSc in Applied Mathematics for Science and Technology with two specialisms
  (i) Decision Science
  (ii) Actuarial and Investment Science

- MSc in Operational Research and Risk Analysis

- BSc(Hons) in Investment Science

- BSc(Hons) in Statistics and Computing

- BSc(Hons) in Actuarial Science

In 2015, PolyU is listed in

- The World’s Top 45 in Statistics and Operational Research, and Top 150 in Mathematics by The QS World University Ranking Agency
- The World’s Top 100 in Mathematics by The Academic Ranking of World Universities

ABOUT THE DEPARTMENT

The Department of Applied Mathematics (AMA) is committed to quality teaching and research activities in mathematical science. We also contribute to the University by offering broad range of academic programmes and the supervision of research students. In addition, we provide courses to various departments and faculties across the University, via service teaching.
RESEARCH

Our research work in mathematical science encompasses both the theoretical and the applied aspect, with emphasis on solving real-life problems in science, engineering, business and finance. The main research directions of the Department are in the areas of Applied Statistics and Financial Mathematics, Operations Research and Optimization, Engineering and Computational Mathematics.

The Department also encourages interdisciplinary research and has many joint publications and joint research projects. Our collaborative partners include a number of prestigious research institutions in the Mainland China, Australia, Japan, Europe and USA. Our main research areas include:

- Applied Probability and Statistics
- Computational Mathematics
- Financial Mathematics
- Matrix and Tensor Computation
- Nonlinear Optimization
- Numerical Methods for Differential Equations
- Optimal Control
- Partial Differential Equations

Besides, PolyU and the Academy of Mathematics and Systems Science of the Chinese Academy of Sciences (AMSS) jointly established the AMSS-PolyU Joint Research Institute (JRI) to capitalize on the combined expertise and promote research collaborations on Engineering and Management Mathematics.

SOME RESEARCH STATISTICS

<table>
<thead>
<tr>
<th>No. of research students:</th>
<th>6 (MPhil)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>30 (PhD)</td>
</tr>
<tr>
<td>No. of on-going projects:</td>
<td>124</td>
</tr>
<tr>
<td>No. of papers in refereed journals:</td>
<td>113 (2013/2014)</td>
</tr>
<tr>
<td>No. of journals served as editors:</td>
<td>8 (2013/2014)</td>
</tr>
</tbody>
</table>
“THE PROGRAMME ALSO GAVE ME OPPORTUNITIES TO SHARPEN MY ANALYTIC THINKING, WHICH IS OF GREAT BENEFIT TO MY WHOLE LIFE.”

Lawrence C.M. Li
Director
Compassco Enterprises Co., Ltd.
The Department places great emphasis not only on quality teaching but also all-round development of our students. Beyond classroom teaching, a wide range of extra-curricular activities are planned to provide students with a global outlook and enrich their learning and knowledge. Latest activities include:

**Mentorship Scheme**

This scheme is introduced by the University to enhance the all-round development of students. Through regular mentoring interaction, the scheme provides a platform for business and industry professionals to share their valuable experiences with students, and to groom students to be a critical thinker, effective communicator, innovative problem solver, lifelong learner and ethical leader in the ever-increasing competitive world.

**Student Learning Experience Scheme**

The Department has organized a series of Learning Experience Tours for its Investment Science students, to Kyoto, Taipei, Seoul, Shanghai, Sydney and Singapore since 2008. The scheme provides students with an opportunity to gain a better understanding of recent financial development in Mainland China and overseas, as well as to strengthen their sense of social and national responsibilities.

*Tea gathering with mentors 2015*

*Study tour to Kyoto, Japan 2015*

*Study tour to Taipei, Taiwan 2014*

*Business dining etiquette workshop 2015*
PolyU has implanted a will and provided facilities for my tertiary education. My 3-year studies in PolyU not only empowered me with the technical skills required to meet the demand of my early career, but also nurtured me with independent thinking, a mature personality and a solid background instrumental for continuous studies and career development.

Stephen Yip
IT Project Manager
HKSAR Government
Kimmy Chan  
Senior Financial Risk Analyst, Bank of China (Hong Kong) Limited  
I had a wonderful memory of studying for both my Higher Diploma and my BSc in the Department of Applied Mathematics. The principles and techniques I learnt from those courses were practical and have helped me a lot in my work.

Victor S.Y. Lo  
Vice President, Decision Sciences Fidelity Investments  
My study in the Department of Applied Mathematics stimulated my strong interest in applied mathematics and statistics, which triggered my pursuit of further studies. Today, I am managing an analytics group in a major global financial services firm based in Boston. I felt MSc gave stronger practical foundations that are essential in business and industry.

Lawence C.M. Li  
Director, Compasseco Enterprises Co. Ltd  
The MSc of Applied Mathematics at PolyU is a world-class programme that provided me with strong practical foundations for my career and it strengthened my academic development for future studies. Besides, the programme also gave me opportunities to sharpen my analytic thinking, which is of great benefit to my whole life.
**Programme Aims and Objectives**

- To provide mathematical modelling and computational techniques that are useful to engineers, scientists, technologists, and managers.
- To focus on applications and the use of computer packages to handle real-world data and solve practical problems.

**Actuarial and Investment Science (AIS)**

**Duration and Credit Requirement**
- Mode of Study: Full-time
- Normal Duration: 2 years
- Credits Required for Graduation: 30 credits
- Type of Funding: Self-financed

**Aims**

To provide a solid foundation in actuarial and investment science.

**Programme Structure**

Students studying for MSc (Actuarial and Investment Science) award need to complete:

- 7 compulsory subjects and
- A dissertation or 3 additional core subjects

**Decision Science (DS)**

**Duration and Credit Requirement**
- Mode of Study: Part-time
- Normal Duration: 3 years
- Credits Required for Graduation: 30 credits
- Type of Funding: Self-financed

**Aims**

To provide an up-to-date theoretical and practical knowledge in statistics, operations research and scientific computing relevant to decision making and practical problem solving in engineering, finance and management.

**Programme Structure**

Students studying for MSc (Decision Science) award need to complete:

- 4 core subjects (including the compulsory subject “Mathematical Modelling for Science and Technology”) and
- 3 other subjects (core or elective) and
- A dissertation or 3 additional core subjects
**Entrance Requirements**

- Bachelor's degree with Honours in engineering, computer science, basic science, business, economics, or the equivalent.
- Industrial or business experience will be an asset.

**English Requirements**

For applicants who are not native English speakers and whose first degree qualifications are not obtained through the English medium, they are required to obtain one of the following to ensure that our admittees have reached a compatible English language standard:

- A TOEFL score of 550 or above for the paper-based tests, OR a TOEFL score of 80 or above for the Internet-based tests OR
- An overall Band Score of at least 6 in the International English Language Testing System (IELTS)

The aforementioned qualifications are by no means exhaustive. The Department has the full discretion to accept other English qualifications as deemed equivalent to admitting applicants to our programme.

**Career Prospects**

Become leading professionals in engineering, management and finance for the Decision Science specialism; or in addressing business and societal problems that require identification, quantification, assessment, or management of the financial implications of risks for the Actuarial and Investment Science specialism.

Important: This leaflet was compiled in August 2015. Applicants are advised to visit Academic Secretariat website www.polyu.edu.hk/study for the latest information.
CHARACTERISTICS

Hong Kong is a gateway between East and West. As a global service centre, it plays a major role in interfacing between suppliers and customers around the world. To retain their leading competitive position in serving international markets, it is crucial for Hong Kong businesses to embrace best practices in operational research. As a result, companies are increasingly looking for innovative leaders with the vision and skill to manage their logistics. Moreover, this programme provides training in risk analysis so that graduates can serve policy makers and institutional investors, with foci on various types of financial products such as mutual funds and hedge funds.

PROGRAMME AIMS AND OBJECTIVES

To produce graduates with strong operational research, risk analysis and statistical skills and a thorough understanding of their applications in the world of modern operational research and risk analysis.

To provide a solid theoretical foundation of operational research, risk analysis and statistics to its students, who will then be able to develop an outlook and powerful methodology that remain valuable in whatever careers they pursue in the fast moving world of business, commerce and finance industry.
**PROGRAMME STRUCTURE**

- 7 Compulsory Subjects (21 credits); and
- 3 Elective Subjects (9 credits) or a Dissertation (9 credits)

**ENTRANCE REQUIREMENTS**

- Bachelor's degree with Honours in engineering, computer science, basic science, economics, finance or the equivalent
- Industrial or business experience will be an asset

**ENGLISH REQUIREMENTS**

For applicants who are not native English speakers and whose first degree qualifications are not obtained through the English medium, they are required to obtain one of the following to ensure that our admittees have reached a compatible English language standard:

- A TOEFL score of 550 or above for the paper-based tests, OR a TOEFL score of total 80 or above for the internet-based tests: OR
- An overall Band Score of at least 6 in the International English Language Testing System (IELTS).

The aforementioned qualifications are by no means exhaustive. The Department has the full discretion to accept other English qualifications as deemed equivalent to admitting applicants to our programme.

**OTHER INFORMATION**

This programme has four subjects that are included in the list of reimbursable courses for Continuing Education Fund (CEF).

**CAREER PROSPECTS**

Graduate would be able to pursue a variety of jobs related to operational research and risk analysis, in areas such as logistics service provision, retail, banking, procurement / sourcing and supply chain functions, and modern financial product development and pricing.

Important: This leaflet was compiled in August 2015. Applicants are advised to visit Academic Secretariat website www.polyu.edu.hk/study for the latest information.

**ENQUIRY**

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MISS FOREST CHAN
Tel 3400 3141
Email forest.chan@polyu.edu.hk

URL  網址 www.polyu.edu.hk/ama/pg/63024
PROGRAMME CODE
63423

JUPAS CODE
JS3363

NORMAL DURATION
4 years

CREDITS REQUIRED FOR GRADUATION
129 credits
(plus 2 training credits)
for HKDSE intake

TYPE OF FUNDING
Government-funded

MODE OF STUDY
Full-time

INTAKE QUOTA
17

Programme Structure

Year One Subjects:
Students study compulsory foundation subjects in general studies, mathematics, statistics. For example, Basic Statistics, Calculus and Linear Algebra, Chinese Language, English Language, Introductory Life Science or General Biology, Introduction to Chemistry or General Chemistry, Introduction to Physics or University Physics.

Year Two Subjects:
Students study compulsory subjects in finance, mathematics and statistics. For example, Accounting for Decision Making, Introduction to Economics, Principles of Programming, Advanced Calculus and Linear Algebra, Introduction to Statistics.

Year Three and Four Subjects:

Programme Aims and Objectives

To provide students with strong mathematical and statistical skills and a thorough understanding of their applications in the world of modern investment and finance.

To develop students’ ability in quantitative analysis, critical thinking and communication skills, which will enable them to pursue careers in investment banking, fund management, risk management or financial product development and pricing.

Characteristics

The programme provides cutting-edge knowledge and skills of Investment Science and emphasizes on all rounded education. Students will gain solid mathematical knowledge, quantitative analysis, critical thinking and communication skills specialized to investment and finance. Students must take work placement relevant to the context and knowledge of Investment Science to fulfill the Work-Integrated Education (WIE) requirement. Students are also encouraged to participate in various student development activities, such as mentorship programme, learning experience tours, visit to financial organizations, career talks and community services.
ENQUIRY

DR. LEE HEUNG-WING, JOSEPH
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MISS CECILIA CHAN
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Email macecilia.chan@polyu.edu.hk

URL 網址 www.polyu.edu.hk/ama/ug/63423

INTERVIEW ARRANGEMENT

Selected applicants (with JS3363 as Band A choice) will be invited to attend an interview after the announcement of HKDSE results (July 2016).

OTHER INFORMATION

Syllabuses of the Programme cover the following examination papers of the Hong Kong Statistical Society and the Royal Statistical Society of UK:

- Ordinary Certificate
- Higher Certificate
- Graduate Diploma

CAREER PROSPECTS

Enable students to develop a career in areas such as investment banking, regulatory authorities and trading platform providers, and related work in the insurance industry.

Important: This leaflet was compiled in August 2015. Applicants are advised to visit Academic Secretariat website www.polyu.edu.hk/study for the latest information including admission score calculation mechanism.

Graduate Employment Statistics (2009-2014)

- Business & Finance, 44%
- Scientific/Research, 10%
- Hotel/Catering, 2%
- Insurance/Reinsurance, 7%
- Public Utilities, 2%
- Consultancy, 3%
- Government, 10%
- Property, 2%
- Marketing, 3%
- Social Science/Charity, 3%
- Logistics, 2%
- Retail, 2%
- I.T., 5%
- Education, 2%
- Consultancy, 3%
- Government, 10%
- Property, 2%
- Hotel/Catering, 2%
- Business & Finance, 44%

ENRANCE REQUIREMENTS

For Applicants Apply on the Basis of HKDSE:
The applicants must satisfy the general entrance requirements of The Hong Kong Polytechnic University:

- Level 3 in English Language and Chinese Language; and
- Level 2 in Mathematics, Liberal Studies and one elective subject.

Preferred elective subjects for the programme include:

- All single and combined Science subjects
- Business, Accounting and Financial Studies (Accounting)
- Business, Accounting and Financial Studies (Business Management)

Please refer to ‘Study@PolyU’ for details of admission score calculation mechanism.

The University will consider other qualifications as being equivalent to the specified entrance requirements on their individual merits.

The applicant may also have to satisfy the Selection Panel in other respects such as an interview.

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Graduate Employment Statistics (2009-2014)

- Business & Finance, 44%
- Scientific/Research, 10%
- Hotel/Catering, 2%
- Insurance/Reinsurance, 7%
- Public Utilities, 2%
- Consultancy, 3%
- Government, 10%
- Property, 2%
- Marketing, 3%
- Social Science/Charity, 3%
- Logistics, 2%
- Retail, 2%
- I.T., 5%
- Education, 2%

Career Prospects

Enable students to develop a career in areas such as investment banking, regulatory authorities and trading platform providers, and related work in the insurance industry.

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- Property, 2%
- Marketing, 3%
- Social Science/Charity, 3%
- Logistics, 2%
- Retail, 2%
- I.T., 5%
- Education, 2%