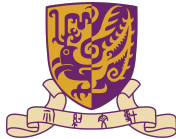


Mathematics and Information Engineering

Chandra Nair

Programme Director (MIEG)



The Chinese University of Hong Kong

Major Allocation
02 March, 2018

What is the MIEG programme?



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- ▶ Solid fundamentals in information and computer sciences, and mathematics



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for what

to provide a good foundation for

- ▶ further studies at the graduate school level
- ▶ pursuing independent research
- ▶ careers in various sectors that require mathematical knowledge such as financial markets



What are the **major required** classes (excluding labs)?

Computer and Information Science courses

- ▶ Data structures (CSCI 2100), Discrete Mathematics (ENGG 2440), Algorithms (CSCI 3160), Probability (ENGG 2430), Programming (IERG 2080), Software Engineering (IERG 3080)
- ▶ Signals and Systems (IERG 2051), Communication Systems (ENGG 2310), Computer Networks (IERG 3310)

Mathematics Courses (from Math department)

- ▶ Foundational Math (MATH 1050), Calculus (MATH 2010, 2020), Linear Algebra (MATH 2040), Real Analysis (MATH 2050), Complex Variables (MATH 2230)



What are some of the areas you can specialize in?

A wide range of **major electives** allow you to specialize (you choose) in

- ▶ Communications Systems and Computer Networks
- ▶ Multimedia (Image and Video) Processing, Machine Learning (Artificial Intelligence)
- ▶ Coding and Information Theory
- ▶ Theory of Computation
- ▶ Data Sciences (Big Data), Optimization
- ▶ Formal and Abstract Mathematics



To which graduate programs have some of the alumni gone?

Data (2010 - 2017)

M.S./Ph.D. in Electrical (Information) Engineering

- ▶ U.C. Berkeley (2011,2016), Stanford (2012, 2013), Caltech (2012, 2016), UIUC (2012), U.C. San Diego (2015), CMU (2016,2017), CUHK (2010-2017), U.T. Austin (2017)

M.S./Ph.D. in Computer Science and Mathematics

- ▶ Georgia (2012), Caltech (2014), Stony Brook (2012), Stanford (2013), Wisc-Mad (2013), HKU (2015, 2016), HKUST (2016), CUHK (2016,2017), CMU (2017), Rice (2017), U.C. San Diego (2017)

M.S./Ph.D. in Finance

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Remark

- ▶ More than **60 percent** of the alumni of this program goes to graduate schools
- ▶ Rest find jobs in a variety of industries like finance, programming, etc.



The secret behind the numbers

- ▶ You reap what you sow
 - In other words, the curriculum is **demanding**
- ▶ It is designed for **the best of the best** (Yearly intake: ≈ 15)



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Hence, this year we are changing the admission scheme into this **boutique and demanding** program



New Major Admission Scheme for MIEG

Beginning this admission exercise, you get assigned into MIEG in two ways

- ▶ **Full Admission**: This is reserved for students with truly exceptional first year performance in mathematics and related courses
- ▶ **Provisional Admission**: This is for students whom we believe has the potential to fulfill the criteria of this demanding program



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How does provisional admission work and what happens later?

- ▶ When the allocation results are announced, you will be told that you are *provisionally admitted* into the program
- ▶ You will follow the MIEG study plan in Term 3
- ▶ If you obtain a certain threshold grade (right now a grade of B-) in **both** MATH 1050 and ENGG 2440, then your provisional status will be lifted.
 - This is done by applying for a transfer of major to MIEG at the end of Term 4.
- ▶ Those on provisional admission status will have their major listed as IERG in CUSIS in Terms 3 and 4.
 - If you fail to achieve the above mentioned threshold, then you will continue as regular IERG students
 - You may also apply for transfer to other majors at the end of Term 4 (though such transfers are not guaranteed).

Rationale for this scheme

There are a few reasons for adopting this new scheme

- ▶ You have not taken any abstract math courses in year 1 and the math department would like to know that you have the capability for undertaking advanced math courses
- ▶ You get a chance to test if you can cope with this demanding curriculum



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- ▶ If you do not meet this threshold in Term 3, given the large overlap between IE and MIEG you can still easily finish the graduation requirements in normal time
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Ask yourself:

- ▶ Do I want to pursue higher studies?
- ▶ Do I want to have solid fundamentals in information and computer sciences?
- ▶ Am I mathematically inclined?

If the answer to these questions is a resounding **YES**, then MIEG is the right programme for you.



You got me intrigued, now what?

Your next step: gather lots of information

- ▶ From Alumni
- ▶ From Webpage: <http://www.mie.cuhk.edu.hk>
- ▶ From me (send email to make an appointment)
 - My email: chandra@ie.cuhk.edu.hk
 - My webpage: <http://chandra.ie.cuhk.edu.hk>
 - My Office: SHB 811



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QUESTIONS

