BME Town Hall Meeting
2015 11 26
Agenda

- Program Outcomes
- Workload expectation
- Major Streams Selection
- Minor Selection
- Summer Training
- Undergraduate Research Opportunities
- Professional Internships / Work-Study Programme
- Job Placements
- Further Studies
- EMedic Global 2016
<table>
<thead>
<tr>
<th>PO1</th>
<th>an ability to master the required knowledge of mathematics, science, and engineering and apply them appropriately to the BME discipline in general and/or to a specialized BME area</th>
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<td>PO2</td>
<td>an ability to design and conduct experiments, collect data on humans and other biological specimens, and to analyze and interpret data to address health-related issues</td>
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<tr>
<td>PO3</td>
<td>an ability to design a system, component or process to meet desired needs within realistic constraints, and to develop innovative technologies to serve the healthcare needs of society</td>
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<td>PO4</td>
<td>an ability to identify, formulate and solve engineering problems critically</td>
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<td>PO5</td>
<td>an ability to use the techniques, skills, and modern engineering tools necessary for BME practice</td>
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Which of the above do you think you need more help with?
<table>
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<tr>
<th>PO</th>
<th>Description</th>
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<tr>
<td>PO6</td>
<td>an ability to use the computer/IT tools relevant to the BME discipline along with an understanding of their processes and limitations</td>
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<td>PO7</td>
<td>an ability to communicate effectively</td>
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<td>PO8</td>
<td>an ability to demonstrate leadership, to manage projects, and to function on multi-disciplinary teams</td>
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<td>PO9</td>
<td>an ability to understand professional and ethical responsibility, and the impact of engineering solutions in a global and social context, especially the importance of health, safety and environmental considerations to both workers and the general public</td>
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<td>PO10</td>
<td>a readiness to engage in lifelong learning to stay abreast of contemporary issues, and a capacity to acquire new knowledge and skills across disciplinary boundaries</td>
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Which of the above do you think you need more help with?
Student Experience Questionnaire

Workload

- For a 3-unit course, generally expect an average student should spend ~9 hrs each week in learning:
  - Attending lectures & tutorials
  - Reading and homework assignments
  - Working on project, report and presentation
  - Preparing for quizzes and examination

- Which courses significantly go beyond this guideline?

- Which courses significantly go below this guideline?
ELEG2202 & BMEG2010

Y2 BME students are expected to take BOTH

- ELEG2202 Circuits & Devices
- BMEG2010 BME Labs

at the same time in Y2, T2
Major Streams Selection

- Medical Instrumentation & Biosensors
- Medical Imaging, informatics & Modeling
- Molecular, Cell & Tissue Engineering

Submit to Alexis your stream selection (including NIL) by the end of Term 1, Year 3
Medical Instrumentation & Biosensors

9 units of the 12 major elective units from:
Biofluids
BioMEMS
Bionanotechnology
Medical Robotics
Neuroengineering
Telemedicine & Mobile Healthcare

PLUS a FYP in Medical Instrumentation & Biosensor

Possible Minors: EE, MAE, or Physics
Biomedical Imaging, Informatics & Modeling

9 units of the 12 major elective units from:
Bioinformatics
Biomedical Imaging
Biomedical Modeling
Database & Security
Medical Imaging Applications
Sound & Light Waves in Medicine

PLUS a FYP in Biomedical Imaging, Informatics & Modeling

Possible Minors: CS or EE
Molecular, Cell & Tissue Engineering

9 units of the 12 major elective units from:
Cell Biology
BioMEMS
Biomolecular Engineering
Bionanotechnology
Genetic Engineering
Intro to Molecular Biotechnology
Musculoskeletal Tissue Engineering

PLUS a FYP in Molecular, Cell & Tissue Engineering

Possible Minors: Biology, Biochemistry, Molecular Biotechnology
BME Minor for Other Majors

Minor Programme Requirement: 18 units

REQUIRED:
- BMEG2000 Intro BME (2 units) & BMEG2010 BME Lab (1 unit)

ELECTIVES:
- BMEG2210 Orthopedic Biomechanics & Musculoskeletal Injuries
- BMEG3210 Bioinformatics
- BMEG3120 Database & Security for BME
- BMEG3130 Telemedicine & Mobile Health
- BMEG3210 Biofluids
- BMEG3320 Biomedical Imaging
- BMEG3330 Neuroengineering
- BMEG3420 Medical Robotics
- BMEG3430 Biomaterials & Tissue Engineering
- BMEG4330 Sound & light Waves in Medicine
- BMEG4410 BioMEMS
- BMEG4450 Bionanotechnology
- BMEG4510 Biomolecular Engineering
- ELEG3101 Medical Instrumentation & Sensors
Additional Suggestions

To strengthen your computer skills,

- Short non-credit bearing computer courses offered in EE: Intro to MatLab / Intro to Java
- CSCI 1-unit courses: CSCI1020, 1030, 1040, 1050
  Hands-on Introductory courses

For students interested in biomedical research,

- PHPC2015 Biostatistics
Summer Training

Year-2 Summer, **Required** as ENGG2602

- **Group A** *(immediately following T2 final exams)*
  - Tentatively 16 May to 10 June 2016
  - Main Campus Workshop Training / PWH Training
  - Good for those who want to do summer research / internships

- **Group B** *(immediately following summer term)*
  - Tentatively 4-28 July 2016
  - PWH Training / Main Campus Workshop Training
  - Good for those who want to take courses in the summer term
Professional/Industrial Internships

- Past Summer Internships (~8-10 wks) included
  - Cook Medical
  - EMSD
  - HKPC
  - HA
  - HK Adventive Hospital
  - Johnson & Johnson
  - Medisen
  - Philips
  - Shenzhen Institute of Advanced Technology
  - Terumo BCT Singapore
  - Tronda Electronics

- We are working on some additional ones. Please watch out for our announcements through email.
Professional/ Industrial Internships
Past Work-Studies included (~ 2 terms long)

- Asia Satellite Telecommunication
- ASM Pacific Technology
- AML Health Plus
- EMSD
- HSBC
- ITE Smartcard Solutions
- MiniLogic Device
- Ove Arup & Partners
- PCLauterbur MRI Research Centre
- RF Tech
- Sengital
- Time Medical

We are working on some additional ones. Please watch out for our announcements through email.
Overseas Summer Research Internships (8-10 wks)

North America

- Univ. of California at Irvine (Bio-microfabrication)
- Columbia Univ. (Bone Bioengineering/ Biomaterials, Interface tissue engineering)
- Northwestern Univ. (Rehabilitation Institute of Chicago: Neuroengineering, rehab robotics) (*Need to submit application also through RIC Website http://www.ric.org/research/fellowships/)
- University of Pittsburgh (Biomechanics & Sports Medicine)
- Univ. of Toronto (HollandBloorview Kids Rehabilitation Hospital: Hybrid brain-computer interfaces, Sensing of functional intention)
Overseas Summer Research Internships
(8-10 wks)

Asia & Europe

- National University of Singapore (Tissue engineering)
- Korea Institute of Science & Technology (Optogenetic neuro-modulation)
- Imperial College (Hamlyn Center: Body sensors network, medical robotics)
Overseas Summer Research Internships
(8-10 wks)

Potential Financial Supports

- Charles Kao Oversea Summer Research Scholarships (FoE)
  HKD50K for airfare, room & board, etc.
  Visit FoE Website for Immediate Applications
  Deadline 30 January

- College scholarships

- Stipends from hosting institutions

- Other government scholarships
Overseas Summer Research Internships (8-10 wks)

- You should let Prof Mak know by **30 January** if you are interested in the above BME Overseas Summer Research Internships.

- After consultation with you concerning your interests, Prof Mak would need to recommend you to the professor of your preferred laboratory.

- For some hosting institutions, you may need to submit your materials via the institutional website or interviewed by a professor-in-charge.

- If you want to apply for different scholarships (Charles Kao, College, OSA, etc.) for your overseas internship, please note their deadlines and submit those applications accordingly.
UG Research

Lab attachments during regular terms

- Talk with individual professors
- Some basic commitment of time & efforts

BMEG3910 (3-units) UG Research in BME

- Research under the supervision of a professor in BME
- Registration through Alexis

FoE Summer research programme

- HK10K for 8-10 wks under supervision of a FoE Prof
- Around 60 students supported each summer
- Watch out for FoE announcements
Job Placements

BME-related Placements

- ArjoHuntleigh
- Bright Future Pharmaceutical Lab
- Electrical & Mechanical Services Department, HK Government
- Health Care & Co.
- HealthPro Technology
- HK Applied Science & Technology Research Institute (ASTRI)
- HK Adventist Hospital
- HK Productivity Council
- HomeCare Medical Ltd
- HealthLink
- HomeTech Medical Ltd
- Innotronik
- Johnson & Johnson
- Medtronic
- Medical Technologies Ltd
- Medisense (Sengital)
- Nobel Biocare
- Philips
- Roche Diagnostics
- Siemens Healthcare
- Time Medical
- Transmedic
- Tronda Electronics
- Ultronics
Job Placements

- Research
  - CUHK FoE
  - CUHK FoM
- Other Technical
  - HK Aircraft Engineering Company Ltd (HAECO)
  - ASM Pacific Technology (Computer Vision)
  - PCCW
  - Science International Corporation
  - HK Science Museum
- Non-Technical / Non-BME
  - HSBC/ AIA / Prudential
  - Fire Services Department
  - Secondary school teaching
  - Cathy Pacific
Graduate Employment Survey 2014

BME Graduates Monthly Salary

Average       HKD 16,658
Median        HKD 14,413
Further Studies

Medical Study
- CUHK

Postgraduate Studies
- CUHK / CityU / PolyU
- U Glasgow
- U Aberdeen
- UC San Diego
- U Tokyo
Further Studies

- Should plan to take GRE, TOEFL, IELTS in Term-1
- Many overseas graduate schools have application deadlines around December / January.
- HK PhD Fellowship Scheme (for study in HK universities) application deadline: 1 Dec.
- HK Scholarship for Excellence Scheme (for study in overseas universities) application deadline: 31 Dec.
- PLAN & ACT EARLY!
EMedic Global 2016

video link

The scope of competition includes:

- Health screening & diagnostic devices
- Medical monitoring devices
- Non-implantable therapeutic devices
- Implantable therapeutic devices
EMedic Global 2016 Submission

- 5-minute video presentation and poster
- Deadline: 29 Feb 2016
- Best 12-15 teams will compete in HK on 18-20 August 2016
- Free registration. Do so now!
EMedic Global 2016
Score Rubrics

- Clinical need
- Novelty
- Technical Merit
- Demonstration of Technical Feasibility
- Clinical Feasibility & Translational Readiness
- IP Potential & Business Model
EMedic Global 2016
Awards

- Up to 1 Gold Award (USD2K), 2 Silver Awards (USD1.5K each), and 3 Bronze Awards (USD1K each) (top scores based on all the 6 criteria in the scoring rubrics)

- Most Innovative Award (USD1K) (Highest score in the novelty part in the scoring rubrics)

- Technical Challenge Award (USD1K) (Highest score in the technical merit and demonstration of technical feasibility parts in the scoring rubrics)

- Best Presentation Award (USD1K) (Best performance based on on-site presentations)