

Micro-Modules Production and Management for Faculty of Engineering with Emphasis on Foundation Courses

Teaching Development and Language Enhancement Grant (TDLEG)



Recent research has demonstrated that micromodules has several advantages over videotaping lengthy lectures.

For example, the micro-modules are more focused on the subject, higher quality and better made with intentionally more suited for personalised learning, appropriate for skill-based learning, etc.

The Engineering Faculty continues to promote and deploy eLearning based micro-modules.

Principal Investigator Prof. KING, Kuo Chin Irwin

http://studio.erg.cuhk.edu.hk/micro-modules

Co-Pls

Prof. CHEN, Lian Kuan Prof. LIU, Xunying Prof. LU, Yi Chun

Prof. YIP, Yuk Lap Kevin Prof. ZHAO, Ni

Prof. MENG, Helen

Prof. CHOI, Chung Hang Jonathan

Prof. VONTOBEL, Pascal

Prof. CHEN, Minghua

Prof. YUAN, Haidong

Project Components

- The production of high quality micro-modules contents for engineering foundation courses
- The management of current micro-modules
- The expansion of connectivity with current modules

Project Objectives

- Provide a knowledge and content repository for students
- Have better engagement through increased teacher-student interactions during flipped-
- Create personalised learning path by watching prescribed micro-modules

WHY MICRO-MODULES?

Improve students learning and interactions during flipped classes

OUTCOMES

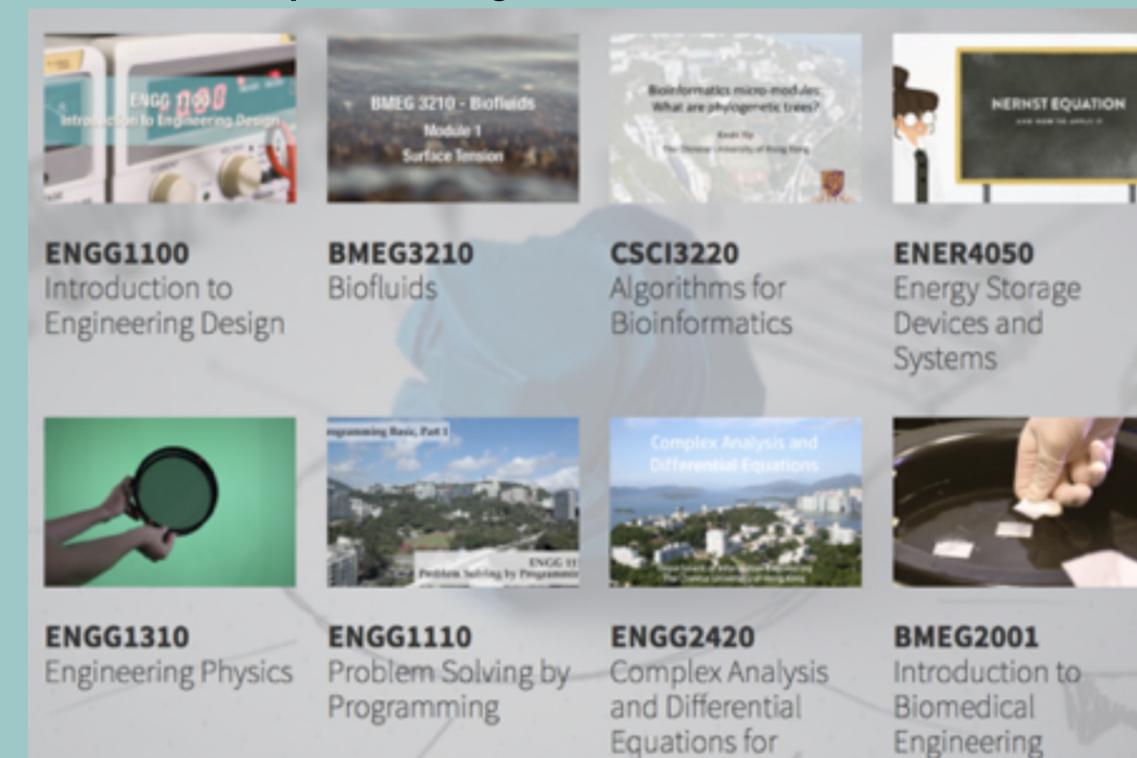
Chunk lessons to keep attention high

Access to recorded course materials any time and anywhere – 24/7

DISSEMINATION

CUHK Engineering Micro-Modules

http://studio.erg.cuhk.edu.hk/micro-modules



Engineers

ADDIE Development Model					
Analyze	Design	Design	Implementation	Evaluate	
Learning Assesment	Concept Development	Pre-production	LMS	Revise	
Strategy	Learning Activities	Production	Pilot Test	Surveys	
Planning	Storyline	Post-production	Assesments	Revise	
Objectives	Media & Tools			Enhance	



Over 60 Micro-Modules Videos

10 Foundation Courses



Over 7200 Minutes

Lab, Class & Studio Recording



Over 855 Minutes

Total Duration of Micro-Modules

Pre-Production	Production	■ Post-Production	
Analyze	Production Design	Video Editing & Color Grading	
Script Development	Video Shooting	Sound Editing	
Module Framework	Voice Over Recording	Graphic & Caption	
	Illustrations & Animation	Revision & Evaluation	
	Simulations	Management & Update	

COURSES



ENGG1100 Introduction to Engineering Design

ENGG1310



Let us move on to a more complex example. After the car ha light. It has to observe and obey the order from the traffic light.

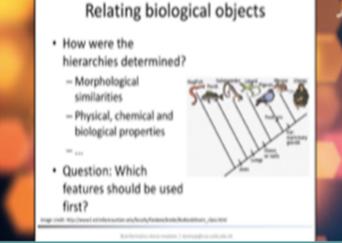
ENGG1110

Problem Solving by Programming



BMEG3210 Biofluids



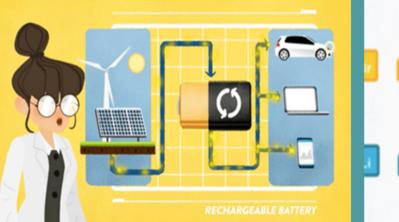


Visualizing a Complex Function

where $z = x + i \cdot y$, $x, y \in \mathbb{R}$, $u(x, y), v(x, y) \in \mathbb{R}$.

deally, we would want to visualize this function in terms of its graph

 $G_f \triangleq \{(x, y, u(x, y), v(x, y)) \mid x, y \in \mathbb{R}, x+iy \in \mathcal{D}\}$





CSCI3220 Algorithms for Bioinformatics

ENGG2420

Complex Analysis and Differential Equations

for Engineers



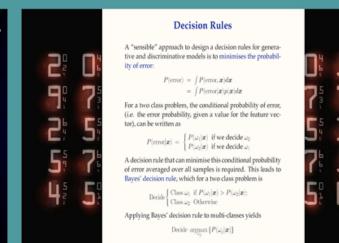
ENGG4050

Energy Storage Devices and Systems

BMEG2001 Introduction to Biomedical Engineering



MODELLING ERROR





ENGG1100 Introduction to Engineering Design



SEEM2460 Introduction to Data Science