

**THE CHINESE UNIVERSITY OF HONG KONG**

**Micro-Module Courseware Development Grant**

**Interim Report (March 2015)**

Report due 31 March 2015.

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**PART I**

Project title: SEEM2460 Introduction to Data Science

Principal supervisor: Helen Meng, Professor and Chairman,

Department / Unit: Department of Systems Engineering & Engineering Management

Project duration: From January 2015 to August 2015

Date report submitted: 31 March 2015

**1. Project objectives**

The project is on track to meet its objectives, which is to produce various micromodules to support the teaching of the captioned course, which is newly designed as a course in the Faculty of Engineering Science Package and is being offered for the first time in Semester 2 of Academic Year 2015-2016.

**2. Progress on process, outcomes or deliverables**

Since Data Science is a hot topic that is applicable in many domains, we have engaged different teachers in order to provide a broader scope of coverage of the componential techniques used in Data Science and their applicability in different domains (e.g. healthcare, logistics, etc.). This is conducive to my department's strategy in providing a soft ramp-up so that colleagues can participate jointly in the production of micromodules. I believe that this is a good strategy to increase the willingness to produce micromodules by a larger number of colleagues.

I have involved the group of participating colleagues in regular meetings, starting with brainstorming to design the course structure, as well as multiple review meetings to lay out the course content to maintain coherence from one lecturer to another. Each lecturer is asked to design the course content with micro-modules in mind and to teach the lecture as such.

The basic step is that all lectures (as this course is taught for the first time) is video-recorded in their entirety. As such the most direct way of production is to "clip the micromodules" straight from the video footage.

This works for some topical areas. However, my personal experience is that having taught in the classroom with student interaction suggested to me that in some cases the micro modules can be re-designed and re-structured. In the process of such exploration, I have also discovered the use of a free software – **Microsoft's OfficeMix** – which I can simply download and use by myself with minimal technical support. In fact, the software tool allows me to produce my own micro-module by myself.

### **3. Evaluation Plan**

One way to evaluate the outcome is the number of micromodules that are produced by a number of different colleagues. This is a useful indicator of the adoption level.

### **4. Dissemination** (reports, websites, video links, products, etc.)

We have raw footage of the lectures taught since the beginning of the semester.

We also have 3 example micro-modules that are contributed by 3 teachers in my department:

Professor Helen Meng on Data Visualization --

<http://share.se.cuhk.edu.hk/data/public/59a0fb.php>

Professor Anthony So on Linear Programming –

<https://www.dropbox.com/s/n0ks6c5rlbemwi4/05%20Introduction%20to%20Linear%20Programming.mp4?dl=0>

Professor Shiqian Ma on Nonlinear Optimization --

<http://www.showreel.hk/temp/B/BisectionMethod.mp4>

We believe that EACH micromodule must be accompanied by peripheral references to support autonomous learning on the part of the learner. Hence each micromodule is accompanied by a set of slides with a list of references posted on CUHK's Elearn.