

**THE CHINESE UNIVERSITY OF HONG KONG**

**Micro-Module Courseware Development Grant**

**Interim Report (March 2015)**

Report due 31 March 2015.

Please return by email to Carol Chiu [carol@itsc.cuhk.edu.hk](mailto:carol@itsc.cuhk.edu.hk)

**PART I**

Project title: Teaching Chemical Laboratory Safety by the “Flipped Classroom” Approach

Principal supervisor: Dr. CHEUNG, Yu San

Collaborators: Dr. CHAN, Wing Fat; Dr. MAK, Kin Wah Kendrew; Dr. WONG, Fai George.

Department / Unit: Chemistry

Project duration: From January 2015 to August 2015

Date report submitted: 31 March 2015

Amount Granted: HK\$83,000

**1. Project objectives**

The project is on track to meet its original objectives specified in the proposal.

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

Three micro-modules have been completed by 31 March 2015 on schedule without obstacle. The remaining five micro-modules will be completed by 31 August 2015.

**3. Evaluation Plan**

Evaluation will be executed in the future when the micro-modules are used in the future according to the plans specified in the original proposal.

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

Three out of eight micro-modules have been completed:

Corrosive chemical

Chemical Information

Extreme Temperature

Each micro-module consists of one or more video clips, a document for in-class discussion, and

a document for multiple questions (with answers) to test the students' understanding of the material.

File list:

Document for in-class discussion for all micro-modules completed so far:

[http://137.189.39.34/safety\\_discussion.pdf](http://137.189.39.34/safety_discussion.pdf)

Document for multiple questions for all micro-modules completed so far (with answers):

[http://137.189.39.34/safety\\_MC.pdf](http://137.189.39.34/safety_MC.pdf)

Video clip(s):

**Corrosive chemical:**

[https://youtu.be/S6qnh3Xg\\_2o](https://youtu.be/S6qnh3Xg_2o)

**Chemical Information:**

<http://youtu.be/TRghT3s5aFQ>

<http://youtu.be/OUAeBnml75k>

**Extreme Temperature:**

<http://youtu.be/7ZqU2wXo6AU>

## Introduction:

This module aims at teaching concepts and practices of laboratory safety through visual demonstrations and text. The content is delivered through online video. The video clip(s) for each micro-modules last for 5 to 8 minutes. English voice-over and subtitle are included in the clips. Students are requested to watch the video clips at home. Teachers will discuss the content with them in classroom. Quizzes of multiple choices are carried out to test their understanding on the topics. After finishing the whole process, the students are expected to understand the concepts and practice of laboratory safety after going through the processes.

The whole module consists of eight micro-modules:

- (a) Personal protective equipment: concerning personal protective equipment in laboratory
- (b) Corrosive chemical: concerning the types of corrosive chemicals
- (c) Flammable chemical: concerning the types of flammable chemicals
- (d) Toxic chemical: concerning the types of toxic chemicals
- (e) Chemical Information: MSDS and Labels: concerning how to get chemical information from MSDS and labels on chemical containers
- (f) System under Pressure: concerning the types of systems under pressure
- (g) Extreme Temperature: concerning the types of extreme temperatures
- (h) Electrical hazard: concerning electrical hazards

Three of them have been completed and their content can be downloaded from:

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“Corel VideoStudio Pro X6” and “Audacity 2.0.6” were used to produce the video clips. They

are user-friendly softwares for production of the video clips.

The running of these micro-modules will be expected in the school term of Sep-Dec 2015. The MMCD output allows students to read the content at home before coming to classroom/laboratory to participate in the discussion with teachers and classmates. The quizzes help students to evaluate their understanding.