How to Effectively Engage Students?

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CTLE Teaching Innovation Salon 2019

April 10, 2019

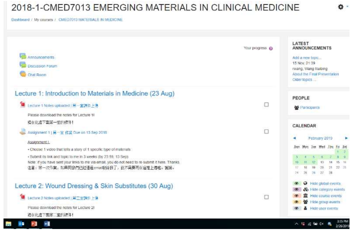
Outline

- ❖ Teaching Philosophy
- ❖ Student Engagements
  - ✓ Blended Learning
  - ✓ Multisensory Learning
  - ✓ Practical Teaching
- ❖ Summary and Discussions

Teaching Philosophy

In teaching courses in Pharmaceutical Sciences and General Education (GE), I focus on two teaching goals: to pass knowledge and to inspire students, by constantly applying the following approaches.

Blended Learning



2018-1-CMED7013 EMERGING MATERIALS IN CLINICAL MEDICINE

Dashboard / My courses / CMED7013 MATERIALS IN MEDICINE

Announcements
Discussion Forum
Chat Room

Lecture 1: Introduction to Materials in Medicine (23 Aug)

Lecture 1 Notes uploaded

Please download the notes for Lecture 1!

Assignment 1 Due on 13 Sep 2018

Assignment I:
- Choose 1 video that tells a story of 1 specific type of materials
- Submit its link and topic to me in 3 weeks (by 23:59, 13 Sep)

Note: If you have sent your links to me via email, you do not need to re-submit it here. Thanks.

Lecture 2: Wound Dressing & Skin Substitutes (30 Aug)

Lecture 2 Notes uploaded

Please download the notes for Lecture 2!

Your progress
LATEST ANNOUNCEMENTS
Add a new topic...
15 Nov, 21:39
rwang, Wang Ruibing
About the Final Presentation
Older topics ...
PEOPLE
Participants
CALENDAR
February 2019
Hide global events
Hide category events
Hide course events
Hide group events
Hide user events

"Emerging Materials in Clinical Medicine" Moodle Page
2018

Multisensory Learning

UG "Modern Drug Discovery"
Lab Tour
Nov. 2017

Practical Teaching

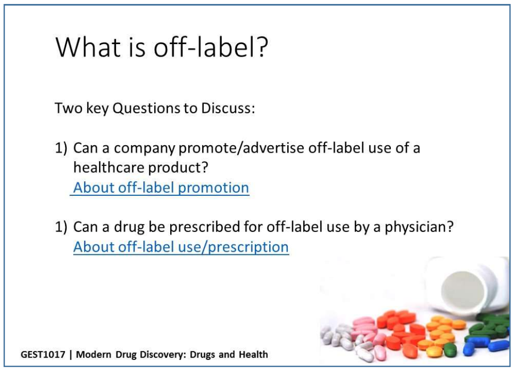
PG "Advanced Pharmaceutics"
showing a pricy real-world Product!!!
Feb. 2019

Blended Learning

Component	Traditional Learning	Blended Learning
Instructor Role	• Authority • Assesses with quizzes, tests, and papers a few times a semester	• Facilitator • Guides students in learning • Provides frequent feedback with many small assessments
Student Role	• Attend class • Do homework • Take tests • Depend on instructor to cover material	• Individual or collaborative work • More responsibility for learning
Learning Environment	• Class lectures • Perhaps some material is posted or organized online	• Class time shortened and/or used more for interactive learning activities • Class activities partially online and partially face-to-face
Approach	• Teacher-centered • Passive • Individual	• Learner-centered • Active • Collaborative

Blended Learning

In-class Discussions



What is off-label?

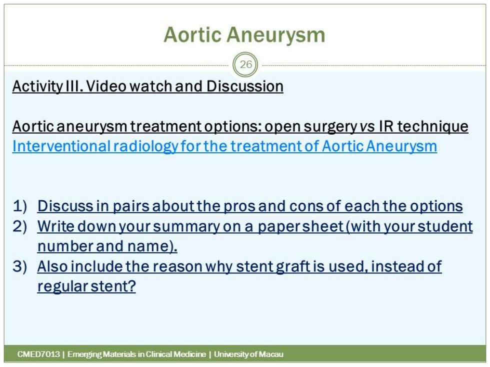
Two key Questions to Discuss:

1) Can a company promote/advertise off-label use of a healthcare product?
   About off-label promotion

1) Can a drug be prescribed for off-label use by a physician?
   About off-label use/prescription

GEST1017 | Modern Drug Discovery: Drugs and Health

UG "Modern Drug Discovery" 2018/2019 Sem 1



Aortic Aneurysm

26

Activity III. Video watch and Discussion

Aortic aneurysm treatment options: open surgery vs IR technique
Interventional radiology for the treatment of Aortic Aneurysm

1) Discuss in pairs about the pros and cons of each the options
2) Write down your summary on a paper sheet (with your student number and name).
3) Also include the reason why stent graft is used, instead of regular stent?

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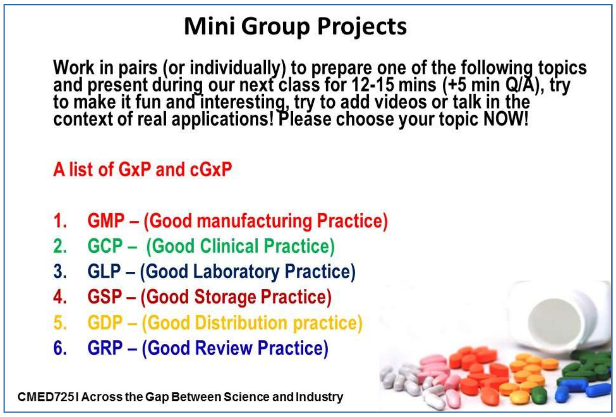
PG "Emerging Materials in Clinical Medicine" 2018/2019 Sem 1

Blended Learning

Student Presentations



Mini Group Projects

Work in pairs (or individually) to prepare one of the following topics and present during our next class for 12-15 mins (+5 min Q/A), try to make it fun and interesting, try to add videos or talk in the context of real applications! Please choose your topic NOW!

A list of GxP and cGxP

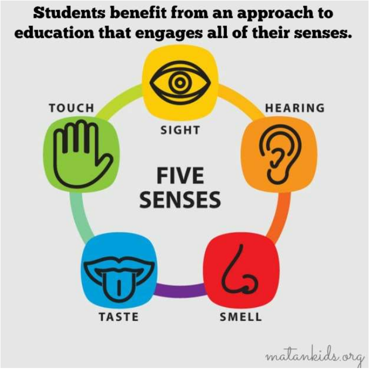
1. **GMP – (Good manufacturing Practice)**
2. **GCP – (Good Clinical Practice)**
3. **GLP – (Good Laboratory Practice)**
4. **GSP – (Good Storage Practice)**
5. **GDP – (Good Distribution practice)**
6. **GRP – (Good Review Practice)**

CMED7251 Across the Gap Between Science and Industry

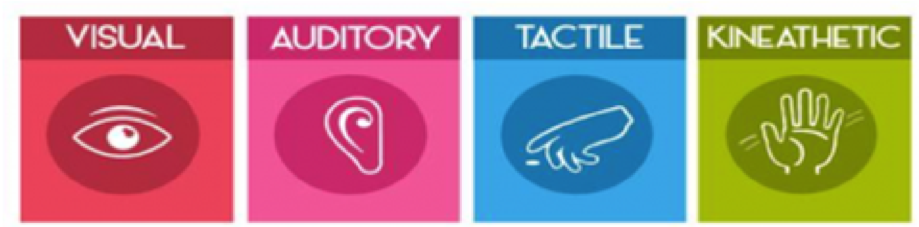
PG "Across the Gap between Science and Industry" 2017/2018 Sem 1

PG "Advanced Pharmaceutics" 2018/2019 Sem 2

Multisensory Learning

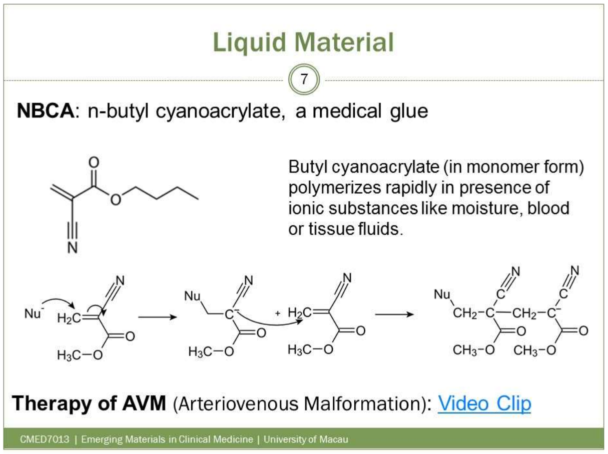

Students benefit from an approach to education that engages all of their senses.
TOUCH
SIGHT
HEARING
FIVE SENSES
TASTE
SMELL
matankids.org

Sight
Hearing
Touch
Multi (more than one) + Senses =
Multisensory


VISUAL
AUDITORY
TACTILE
KINEATHETIC

Multisensory Learning

Enhanced Visual/Auditory Learning


Liquid Material

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NBCA: n-butyl cyanoacrylate, a medical glue

Butyl cyanoacrylate (in monomer form) polymerizes rapidly in presence of ionic substances like moisture, blood or tissue fluids.

Therapy of AVM (Arteriovenous Malformation): Video Clip

CMED7013 | Emerging Materials in Clinical Medicine | University of Macau

PG “Emerging Materials in Clinical Medicine” 2018/2019 Sem 1

Multisensory Learning

Use of a Variety of “toys” in Class

7:13 PM
Feb 22, 2019
7:21 PM
Feb 22, 2019
7:09 PM
Feb 22, 2019
7:24 PM
Feb 22, 2019

Multisensory Learning

Move Class into the Lab

UG “Modern Drug Discovery” Lab Tour, Nov. 2017

Practical Teaching

Link Subject Knowledge with Real World Applications

Drug-Eluting Beads

TheraSphere

Pogostemon Novel Formulation
廣藿香揮髮油新劑型

Outcome: Student Feedback

		Course Code – Section	Level (PG/ UG	No. of credits	% of Teaching load for this section	No. of students enrolled	About the course			About the instructor/supervisor			Teaching effectiveness report response %
							Individual Mean (SD)	Dept. Mean (SD)	Faculty Mean (SD)	Individual Mean (SD)	Dept. Mean (SD)	Faculty Mean (SD)	
AY 2018/19	1st sem	CMED7013	PG	3	50	21	4.9 (0.3)	4.7 (0.16)	4.7 (0.16)	4.9 (0.3)	4.7 (0.15)	4.7 (0.15)	100%
		GEST1017	UG	3	34	50	4.2 (0.63)	4.2 (0)	4.2 (0)	4.3 (0.63)	4.28 (0)	4.28 (0)	89.8%
AY 2017/18	1st sem	CMED721	PG	3	50	12	4.75 (0.45)	4.5 (0.21)	4.5 (0.21)	4.83 (0.39)	4.53 (0.22)	4.53 (0.22)	100%
		GEST021	UG	3	34	50	4.06 (0.69)	4.06 (0)	4.06 (0)	4.21 (0.69)	4.17 (0)	4.17 (0)	68%
	2nd sem	CMED725	PG	3	34	11	4.45 (0.52)	4.47 (0.22)	4.47 (0.22)	4.64 (0.5)	4.52 (0.21)	4.52 (0.21)	100%
		CMED805	PG	3	25	4	5 (0)	4.67 (0.23)	4.67 (0.23)	5 (0)	4.79 (0.12)	4.79 (0.12)	100%
AY 2016/17	2nd sem	CMED721	PG	3	50	16	4.6 (0.51)	4.37 (0.28)	4.37 (0.28)	4.8 (0.41)	4.39 (0.22)	4.39 (0.22)	93.75%
		CMED725	PG	3	34	7	4.71 (0.49)	4.37 (0.28)	4.37 (0.28)	4.86 (0.38)	4.39 (0.22)	4.39 (0.22)	100%
		CMED805	PG	3	25	8	4.13 (0.83)	4.32 (0.5)	4.32 (0.5)	4.38 (0.74)	4.54 (0.28)	4.54 (0.28)	100%

Outcome: Student Feedback

UG GEST021 "Modern Drug Discovery" 2017/2018

- 老師風趣幽默，課堂很有趣！
- 我覺得老師很好，笑容真誠，更用心的教導我們，上課帶動氣氛，會聽同學們的意見然後作出修改，例如是一開始的時候語速過快，後來調整了，口音很標準，課堂資料能幫我們更用心學習。

PG CMED 721 "Emerging Materials in Clinical Medicine" 2017/2018

- Prof. Ruibing is really intelligent and has active thoughts. He always **comes up with many inspirative questions and asks us to think about them**, making us learn more comprehensively. It helps a lot in our study. Besides, the eye contact of him is indeed charming. Nice man.
- 王瑞兵老師專業知識豐富，英語講得十分流利，值得學習~
- 作業和**課堂提問太多**
- 老**師的課上作業的方式，是我們認為最好的方式**。老師很棒。謝謝老師
- 挺好的
- 老師太帥了，聲音也好聽，上王老師的課不會走神的

Note: **ALL the comments are directly copied and pasted here for these two example courses, without any selection or edits.**

Outcome: Increased Enrollment

Played a major role in the design and development of the following curriculum.

TEACH
INSPIRE
MOTIVATE

1. UG: designed and developed *de novo*, one major GE courses (1/3 credit)

GEST021 (GEST1017) Modern Drug Discovery: Drugs and Health

2. PG: designed and developed *de novo,* two elective courses (1/2 credit each)

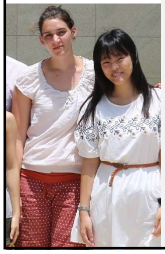
CMED721 (CMED7013) Emerging Materials in Clinical Medicine (1/2 credit)
CMED725 (CMED7017) Across the Gap between Science and Industry (1/2 credit)

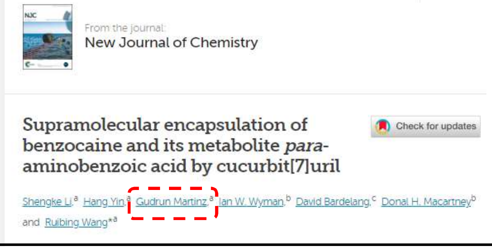
These elective courses have been turned into "*Voluntarily Compulsory*"!!!

Participated in the design and delivery of another PhD course (CMED8002)

Engaging and Inspiring Undergraduates

Student	Start	Completion	Institution
Pui Kei MOU	2015.06	2015.08	University of Macau, Macau
Zhongyu HUANG	2017.06	2017.08	University of Macau, Macau
Ruige Yi	2018.06	2018.08	University of Macau, Macau
Gudrun Martinz	2015.07	2015.08	University of Vienna, Austria
Greg Andrews	2016.07	2016.09	University of Glasgow, UK
Heda Jakubuv	2017.07	2017.08	University of Chemistry and Technology, Czech Republic
Rosa Nascimento	2018.08	2018.10	New University of Lisbon, Portugal
Emily Man Ieng Lao	2018.08	2018.09	University College London (UCL)

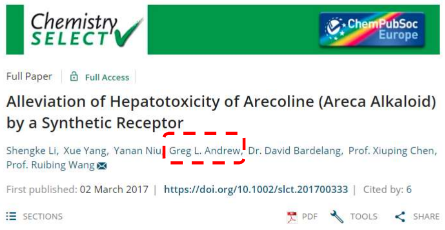




From the journal:
New Journal of Chemistry

Supramolecular encapsulation of benzocaine and its metabolite *para*-aminobenzoic acid by cucurbit[7]uril

Shengke Li,[a] Hang Yin,[a] Gudrun Martinz,[a] Ian W. Wyman,[b] David Bardelang,[c] Donal H. Macartney[b] and Ruibing Wang*[a]

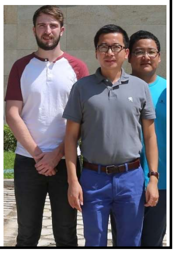


Full Paper | Full Access

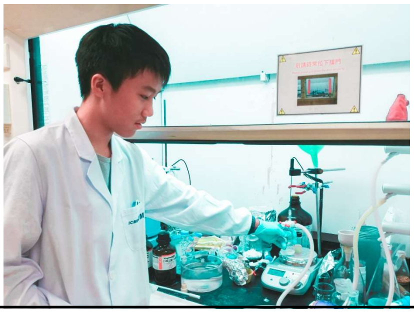
Alleviation of Hepatotoxicity of Arecoline (Areca Alkaloid) by a Synthetic Receptor

Shengke Li, Xue Yang, Yanan Niu, Greg L. Andrew, Dr. David Bardelang, Prof. Xiuping Chen, Prof. Ruibing Wang

First published: 02 March 2017 | https://doi.org/10.1002/slct.201700333 | Cited by: 6



Engaging and Inspiring High-School Students



Engaging and Inspiring High-School Students

iSWEEEP, Houston, USA, 2017

HK Student Science Competition, HK, 2018

OKSE2F International, Turkey, 2018

iSWEEEP, Macau, 2018

Discussions

Student Engagements: other techniques?

Thank you!