



**Chulabhorn Graduate Institute**  
**0403503 Drug Discovery and Development**

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**Course Description:**

The course introduces principles of drug discovery and development. Then, synthetic methodologies commonly used in the synthesis of some current drugs are discussed. Modern techniques employed in process-scale synthesis of small-molecule drugs are also described. In addition, examples of the discovery and development of different classes of drugs in the market are presented as case studies.

**Course Coordinator:** Charnsak Thongsornkleeb, Ph.D.

**Course Category:** Required Course

**Duration:** May 21, 2019 – June 11, 2019 and June – October, 2019 (for CGAB503)

**Time:** 9.00 – 12.00

**Place:** Seminar Room, 3<sup>rd</sup> Floor, CGI Building and to be announced (for CGAB503)

**Grading Scheme:**

Final Examination	50%
Final Presentation and Participation	50%

**Course Schedule**

<b>Date</b>	<b>Topic</b>	<b>Lecturer</b>
May 21, 2019 9:00 – 12:00	L1: Introduction to Drug Discovery and Development	CE
May 23, 2019 9:00 – 12:00	L2: Synthetic drugs I	RS
May 28, 2019 9:00 – 12:00	L3: Synthetic drugs II	WN
May 30, 2019 9:00 – 12:00	L4: Process chemistry L5: Flow chemistry	CT SS
June 4, 2019 9:00 – 12:00	L6: Case study I L7: Case study II	RS WN

June 6, 2019 9:00 - 12:00	L8: Case study III	PS
<b>June 11, 2019 9:00 - 12:00</b>	<b>Final examination (L1 - L3)</b>	<b>Staff</b>
June 2019 - October 2019	ADME of drugs	PCD
	ADME case studies	PCD
	Pharmacodynamics of drugs	PCD
	Biologic Drugs	CA
	Non-clinical and clincan	DS
	Quality systems	NMP
	Quality assurance (QA) and quality check (QC)	NMP
	Intellectual properties	JV
	Marketing	AN, NS
	Entrepreneurship	Ram
	Case studies on HIV	JME
	Biology of HIV disease	JME
Group assignments	Staff	
October, 2019	<b>Final presentation</b>	<b>Staff</b>

Note: the highlighted schedule after the final examination is part of CGAB503.

**Lecturers:**

Chatchakorn Eurtivong, Ph.D. (CE)  
Rungroj Saruengkhanphasit, Ph.D. (RS)  
Worawat Niwetmarin, Ph.D. (WN)  
Satapanawat Sittihan, Ph.D. (SS)  
Charnsak Thongsornkleeb, Ph.D. (CT)  
Pattarawut Sopha, Ph.D. (PS)  
John M. Essigmann (JME)

Peter C. Dedon, M.D., Ph.D. (PCD)  
Charlarmchai Artpradit, Ph.D. (CA)  
Daam Settachan, Ph.D. (DS)  
Monique Paricharttanakul, Ph.D. (NMP)  
Janice Vatland, Ph.D. (JV)  
Amir Nashat, Ph.D. (AN)  
Nathan Stebbins, Ph.D. (NS)  
Ram Sasisekharan (Ram)