



BioPharmaceutical Engineering



Practice School (BioPhEPS)

King Mongkut's University of Technology Thonburi
(KMUTT)

Roadshow Presentation for Academic Year 2017

Dr. Hong-ming Ku
Program Director

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Learning Through Practice School

What is an Engineering Practice School?

- ❑ A new learning paradigm: "Learning by Doing"
- ❑ Practice school is one form of Work-Integrated Learning (WiL).
- ❑ Engineering curriculum with compulsory practical training

→ intensive yet practical learning



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Why Practice School?

Why Engineering Practice School?

Graduating engineers possess:

- ❑ Very little hands-on experiences.
- ❑ Inadequate communication skills, particularly English.

→ Companies must invest substantial resources to re-train starting engineers.



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Practice School Concept

A Unique Partnership



University



Students

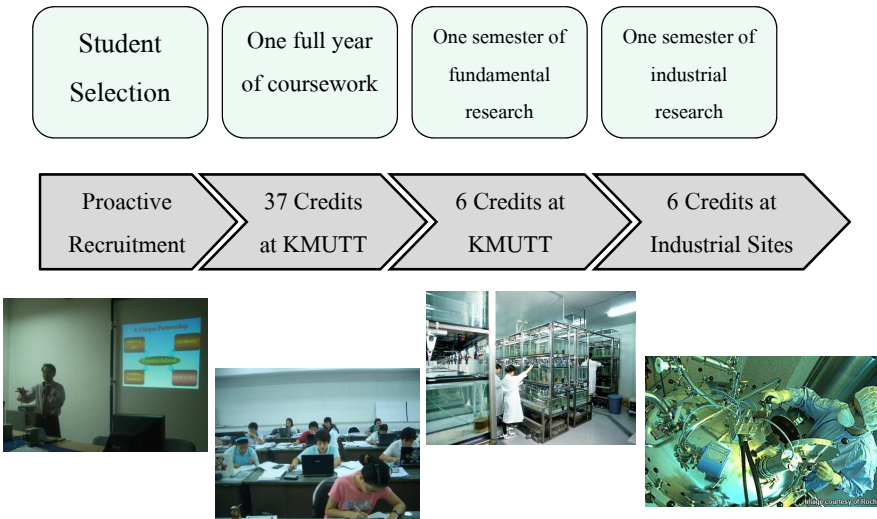


Funding Agency



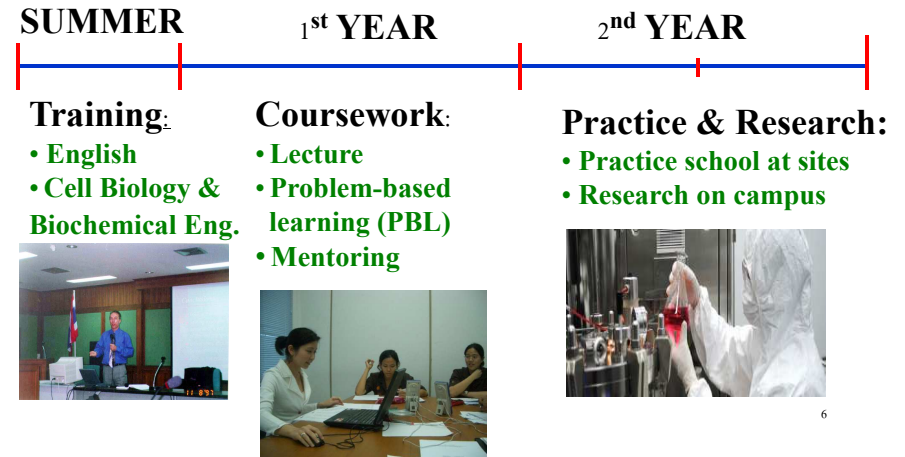
Industry

How BioPhEPS Works



ChEPS Curriculum

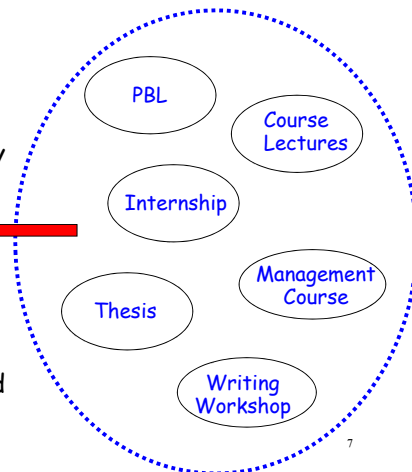
- 📖 2-year Master's program (8 - 15 students/year)
- 📖 Intensity, problem solving, and soft-skill development



Excellence in Engineering Practice

□ Attributes including soft skills needed to become a well-rounded chemical engineer

1. Core technical competency
2. Presentation and writing skills
3. Teamwork, leadership, and maturity
4. Critical thinking and problem-solving skills
5. Positive/notable outcomes from engineering work
6. Creativity and innovation
7. Service to industry, profession, and community



Courses and Contents in 1st Year

- Cell Biology
- Biochemical Engineering
- Intermediate Transport Phenomena
- Chemical Reaction Engineering
- Physical Chemistry of Pharmaceuticals
- Mathematical Analysis for Chemical Engineering

Courses and Contents in 1st Year (Cont'd)

- ❑ Introduction to Development and Manufacturing of Biopharmaceutics
- ❑ Biopharmaceutical Industry
- ❑ Good Manufacturing Practice in Pharmaceutical Industry
- ❑ Pharmaceutical Manufacturing Design Problem
- ❑ Graduate Seminar

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Practice Sites and Research



Research Projects:

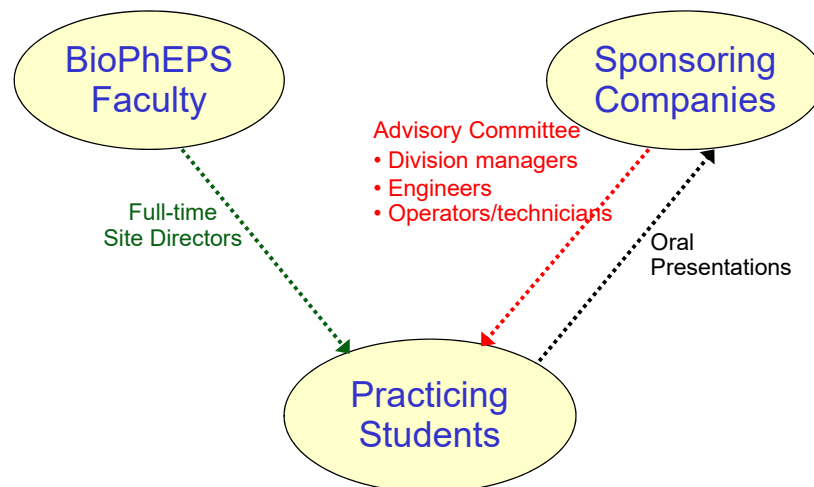
- ❑ Biochemical engineering
- ❑ Drug delivery
- ❑ Bioinformatics
- ❑ Systems biology
- ❑ Biosensors
- ❑ Bioinstrumentation

- ❑ Siam Bioscience Co., Ltd.
- ❑ National Biopharmaceutical Facility (NBF) at KMUTT's Bangkhuntien campus



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Working Relations at a Practice Station



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Important Role of a Site Director

1. Identifying site projects
2. Preparing a working timetable
3. Providing technical advice
4. Coaching the students
5. Facilitating activities between sponsors and students



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Why Enroll in BioPhEPS?

 *Intensive learning in fundamentals*

 *Problem-solving skills*

 *Management skills*

 *Teamwork*



 *English presentations*

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Program Admission

- ★ Bachelor's Degree in Chemical Engineering and related fields in engineering
- ★ GPA of 2.75 or higher
- ★ English Test (Paper-Based TOEFL), SAT Math Test, and interview (in English/Thai)
- ★ Year 2017 enrollment: 8 - 15 students
- ★ Scholarships are available to qualified candidates

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“Thank You for Your Attention”



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