Bachelor of Engineering Program in Chemical Engineering

B.Eng. (Chemical Engineering)

Philosophy of the program

Bachelor of Engineering Program in Chemical Engineering provides students with chemical engineering foundations from both theory and practice. It also provides opportunities for learning new technologies related to chemical engineering in addition to providing necessary skills; for instance, critical thinking, reasoning analysis, problem solving as well as communication skills. Morals and ethics are also emphasized in the program.

Professions after graduation:

1. Process engineers
2. Process and operation design engineers
3. Process planning engineers
4. Safety engineers
5. Sales engineers/Technical consultants/Procurement engineers
6. Researchers or lecturers

Curriculum

Total Program Credits **148 Credits**

Curriculum Components

General Education Courses **31 Credits**

Major Courses **111 Credits กิต**

- ☐ Engineering Foundation Course 51 Credits
- ☐ Professional Education Course 54 Credits
- ☐ Elective Course 6 Credits

Free Elective Courses **6 Credits**

COURSE STRUCTURE

First Year

First Semester	**Credits**
CHE 100 Introduction to Chemical Engineering	1(S/U)
CHM 103 Fundamental Chemistry	3(3-0-6)
CHM 160 Chemistry Laboratory	1(0-3-2)
LNG 105 Academic English for International Students	3(3-0-6)
MTH 101 Mathematics I	3(3-0-6)
PHY 103 General Physics for Engineering Students I	3(3-0-6)
PHY 191 General Physics Laboratory I	1(0-2-2)
GEN 111 Man and Ethics of Living	3(3-0-6)
Total	18(15-5-34)

Second Semester	Credits
CHE 103 Material and Energy Balances	3(3-0-6)
LNG 106 Academic Listening and Speaking	3(3-0-6)
MEE 111 Engineering Drawing	3(2-3-6)
MTH 102 Mathematics II	3(3-0-6)
PHY 104 General Physics for Engineering Students II	3(3-0-6)
PHY 192 General Physics Laboratory II	1(0-2-2)
GEN 121 Learning and Problem Solving Skills)	3(3-0-6)
Total	19 (17-5-38)

Second Year

First Semester	Credits
CHE 210 Industrial Organic Chemistry	3(3-0-6)
CHE 231 Fundamentals of Momentum, Heat and Mass Transfer)	4(4-0-8)
CHE 241 Thermodynamics I	3(3-0-6)
LNG 107 Academic Reading and Writing	3(3-0-6)
GEN 231 Miracle of Thinking	3(3-0-6)
MTH 201 Mathematics III	3(3-0-6)
Total	19 (19-0-38)

Second Semester	Credits
CPE 100 Computer Programming for Engineers	3(2-2-6)
CHE 212 Industrial Organic Chemistry Laboratory	1(0-3-2)
CHE 213 Analytical Chemistry and Instrument	3(3-0-6)
CHE 242 Thermodynamics II	3(3-0-6)
CHE 333 Fluid Mechanics and Equipment Design	3(3-0-6)
GEN 241 Beauty of Life	3(3-0-6)
GEN 101 Physical Education	1(0-2-2)
MEE 214 Engineering Mechanics	3(3-0-6)
Total	20 (17-7-40)

Third Year

First Semester	Credits
CHE 334 Heat Transfer and Equipment Design	3(3-0-6)
CHE 343 Chemical Kinetics and Reactor Design	3(3-0-6)
CHE 471 Engineering Materials and Selection	3(3-0-6)
PRE 372 Probability and Statistics for Engineers	3(3-0-6)
GEN 351 Modern Management and Leadership	3(3-0-6)
MTH 303 Numerical Methods	3(3-0-6)
Total	18 (18-0-36)

Second Semester	Credits
CHE 301 Chemical Process Industries	3(2-2-6)
CHE 335 Mass transfer and Equipment Design	3(3-0-6)

CHE 461 Process Dynamics and Control	3(3-0-6)
CHE 481 Chemical Engineering Laboratory I	2(1-3-4)
GEN xxx Elective I	3(3-0-6)
EEE 102 Electrotechnology I Power	3(2-3-6)
PRE 380 Engineering Economics	3(3-0-6)
Total	20 (17-8-40)

Summer Session

CHE 300 Industrial Training	2 (S/U)

Forth Year

First Semester	**Credits**
CHE 473 Chemical Plant Safety	3(3-0-6)
CHE 482 Chemical Engineering Laboratory II	2(1-3-4)
CHE 483 Undergraduate Seminar	1(0-2-3)
CHE 484 Chemical Engineering Project I	1(0-2-3)
CHE xxx Chemical Engineering Elective I	3(3-0-9)
GEN xxx Elective II	3(3-0-6)
PRE 290 Industrial Organization and Management	3(3-0-6)
XXX xxx Free Elective I	3(3-0-6)
รวม	19 (16-7-43)

Second Semester	**Credits**
CHE 452 Chemical Engineering Plant Design	3(3-0-6)
CHE 454 Chemical Engineering Design Project	1(0-2-3)
CHE 485 Chemical Engineering Project II	3(0-6-9)
CHE xxx Chemical Engineering Elective II	3(3-0-9)
XXX xxx Free Elective	3(3-0-6)
รวม	13 (9-8-33)