

PROGRAM STRUCTURE

LEVEL	: Undergraduate
SCHOOL	: School of Science
PROGRAM	: 623111200 : Bachelor of Engineering Program in Materials Engineering
PROGRAM YEAR	: 2562

1 General Education Course MINIMUM CREDIT : 30

1.1 Language Course MINIMUM CREDIT : 15

Course Code	COURSE	CREDIT
<u>1005120</u>	Thai for Communication E2: 1001105 Thai Language Skills 3 (3-0-6) OR E1: 1005121 Thai Language Conversation in Daily Life 3 (2-2-5)	3 (3-0-6)
<u>1006134</u>	English for Communication 1 P: 1006002 Intensive English 0 (3-0-6) OR P: 1006003 Intensive English for English Majors 0 (3-0-6)	3 (3-0-6)
<u>1006135</u>	English for Communication 2 P: 1006134 English for Communication 1 3 (3-0-6)	3 (3-0-6)
<u>2408101</u>	Chinese 1 E2: 2408001 Chinese 1 3 (3-0-6) OR E2: 1007101 Chinese 1 3 (3-0-6)	3 (3-0-6)
<u>2408102</u>	Chinese 2 P: 2408101 Chinese 1 3 (3-0-6) OR P: 2408001 Chinese 1 3 (3-0-6) OR P: 1007101 Chinese 1 3 (3-0-6) ----- E2: 2408002 Chinese 2 3 (3-0-6)	3 (3-0-6)

1.2 Social Science Course MINIMUM CREDIT : 6

Course Code	COURSE	CREDIT
<u>1203102</u>	Managing Organization and Entrepreneurship	3 (3-0-6)
<u>1601104</u>	Global Citizenship E1: 1601103 Know Your Laws 3 (3-0-6) AND E1: 2302102 Man and Society 3 (3-0-6) OR	3 (3-0-6)

E1: 1601103 Know Your Laws 3 (3-0-6) AND
 E1: 2302101 ASEAN Studies 3 (3-0-6)

1.3 Science and Mathematics Course MINIMUM CREDIT : 6

Course Code	COURSE	CREDIT
<u>1101105</u>	Sciences and Mathematics All Around E1: 1101100 Science for Life 3 (3-0-6) AND E1: 1106100 Mathematics for Life 3 (3-0-6)	3 (3-0-6)
<u>1301110</u>	Introduction to Information Technology and Data Science E1: 1301104 Introduction to Information Technology 3 (2-2-5) OR E1: 1301107 Basic Information Technology 3 (2-2-5)	3 (2-2-5)

1.4 Humanities Course MINIMUM CREDIT : 3

Course Code	COURSE	CREDIT
<u>1001127</u>	Psychology in Daily Life E2: 1001141 General Psychology 3 (3-0-6)	3 (3-0-6)

1.5 Integrative Course (non-credit) MINIMUM CREDIT : -

Course Code	COURSE	CREDIT
<u>MFU333</u>	MFU Character	0 (0-6-2)

2 Specific Required Course MINIMUM CREDIT : 96

2.1 Core Course MINIMUM CREDIT : 42

2.1.1 MINIMUM CREDIT : 24

Course Code	COURSE	CREDIT
<u>1102201</u>	Chemistry for Engineers E2: 1102101 General Chemistry 1 3 (2-3-5) AND E1: 1102102 General Chemistry 2 3 (2-3-5)	4 (3-3-7)
<u>1104104</u>	Physics for Engineers 1	4 (3-3-7)
<u>1104105</u>	Physics for Engineers 2 P: 1104104 Physics for Engineers 1 4 (3-3-7)	4 (3-3-7)
<u>1106103</u>	Mathematics 1	3 (3-0-6)
<u>1106104</u>	Mathematics 2 P: 1106103 Mathematics 1 3 (3-0-6)	3 (3-0-6)
<u>1106203</u>	Programing and Computational Methods for Engineers P: 1106104 Mathematics 2 3 (3-0-6)	3 (2-3-5)
<u>1112213</u>	Engineering Statistics	3 (3-0-6)

2.1.2 MINIMUM CREDIT : 18

Course Code	COURSE	CREDIT
<u>1112101</u>	Engineering Drawing	3 (1-6-4)
<u>1112103</u>	Workshop Skills	1 (0-3-1)
<u>1112104</u>	Soft Skills for Science and Engineering Professionals	1 (0-3-1)
<u>1112208</u>	Mechanic of Materials	3 (3-0-6)
<u>1112303</u>	Thermodynamics and Kinetics of Materials	4 (4-0-8)
<u>1112415</u>	Engineering Safety	3 (3-0-6)
<u>1203253</u>	Production and Operations Management E2: 1209312 Business Operations and Production Development	3 (3-0-6)

2.2 Specific Required Course MINIMUM CREDIT : 54

2.2.1 Major Required Course MINIMUM CREDIT : 48

Course Code	COURSE	CREDIT
<u>1112105</u>	Materials Science and Engineering 1	4 (4-0-8)
<u>1112201</u>	Materials Engineering Lab 1	1 (0-3-1)
<u>1112202</u>	Materials Engineering Lab 2 P: 1112201 Materials Engineering Lab 1 1 (0-3-1)	1 (0-3-1)
<u>1112203</u>	Materials Engineering Lab 3 P: 1112202 Materials Engineering Lab 2 1 (0-3-1)	1 (0-3-1)
<u>1112212</u>	Materials Science and Engineering 2 P: 1112105 Materials Science and Engineering 1 4 (4-0-8)	4 (4-0-8)
<u>1112214</u>	Global Engineering and Industrial Visits	2 (1-2-3)
<u>1112216</u>	Materials Behavior of and Properties Testing	3 (3-0-6)
<u>1112217</u>	Characterisation of Materials	3 (2-3-5)
<u>1112304</u>	Fundamentals of Composite Materials	3 (3-0-6)
<u>1112305</u>	Degradation and Failure of Materials	3 (3-0-6)
<u>1112309</u>	Materials Engineering Lab 4 P: 1112203 Materials Engineering Lab 3 1 (0-3-1)	1 (0-3-1)
<u>1112310</u>	Sustainable Materials	3 (3-0-6)
<u>1112311</u>	Manufacturing of Products	3 (3-0-6)
<u>1112401</u>	Materials Selection and Design	3 (3-0-6)
<u>1112402</u>	Materials Engineering Seminar	1 (0-3-1)
<u>1112403</u>	Materials Engineering Project	3 (0-9-3)
<u>1112404</u>	Cooperative Education E1: 1112405 Oversea Training	9 (0-40-9)

2.2.2 Major Elective Course MINIMUM CREDIT : 6

Course Code	COURSE	CREDIT
<u>1112312</u>	Material Recycling Technology	3 (3-0-6)

<u>1112406</u>	Biopolymers and Biocomposites	3 (3-0-6)
<u>1112407</u>	Electroceramics	3 (3-0-6)
<u>1112408</u>	Introduction to Industrial Ceramics	3 (3-0-6)
<u>1112409</u>	Nanomaterials	3 (3-0-6)
<u>1112410</u>	Packaging Materials	3 (3-0-6)
<u>1112411</u>	Advanced Materials Processing P: 1112301 Materials Processing 3 (1-4-4)	3 (2-3-5)
<u>1112412</u>	Construction Materials	3 (3-0-6)
<u>1112413</u>	Surface Engineering	3 (3-0-6)
<u>1112414</u>	Engineering Tools Design	3 (3-0-6)
<u>1112416</u>	Biomedical Material	3 (3-0-6)
<u>1112447</u>	Textile Technology	3 (3-0-6)

3 Free Elective Course MINIMUM CREDIT : 6

REMARKS

P : Prerequisite Course

E1 : One-way Equivalent

E2 : Two-way Equivalent

รายวิชา 1006393 Principles of Translation 3(3-0-6) ในกรณีที่นักศึกษาไม่สามารถใช้ภาษาไทยได้ ให้เรียนรายวิชา 1006382 Directed Studies แทน

รายวิชา 1006397 Comparative Study of English and Thai 3(3-0-6) ในกรณีที่นักศึกษาไม่สามารถใช้ภาษาไทยได้ ให้เรียนรายวิชา 1006381 Selected Reading แทน