Curriculum
(Mechanical Engineering – International Programme)

The total number of credits throughout the course is not less than 145 credits.

1. General Education **30 credits**

1.1 Required Courses **21 credits**

001101	ENGL 101	Fundamental English 1	3(3-0-6)
001102	ENGL 102	Fundamental English 2	3(3-0-6)
001201	ENGL 201	Critical Reading and Effective Writing	3(3-0-6)
001225	ENGL 225	English in Science and Technology Context	3(3-0-6)
204100	CS 100	Information Technology and Modern Life	3(3-0-6)

Students with a minimum score of 60 TOEFL iBT or a minimum score of 5.5 IELTS (Academic) are eligible for exemption from ENGL 101 (001101) and ENGL 102 (001102)

- Learner Person 15

259192	ENGR192	Skills for Professionalism and Entrepreneurship	1(0-3-1)

- Innovative Co-creator 1

140104	PG 104	Citizenship	3(3-0-6)
259191	ENGR 191	Principle of Being Professional	1(0-3-1)
259195	ENGR 195	Managing Activities for Development	1(0-3-1)

- Active Citizen 5

A student also chooses at least 3 credits from these GE courses.

Innovative Co-creator

013110	PSY 110	Psychology and Daily Life	3(3-0-6)
204123	CS 123	Introduction to Data Science	3(2-2-5)
210100	MATS 100	World of Materials	3(3-0-6)
703103	MGMT 103	Introduction to Entrepreneurship and Business	3(3-0-6
751100	ECON 100	Economics for Everyday Life	3(3-0-6)

1.2 GE Electives **9 credits**

A student also chooses at least 6 credits from these 2 groups of GE courses.

Learner Person

009103	LS 103	Information Literacy and Information Presentation	3(3-0-6)
001269	PHIL 269	Philosophy of Sufficiency Economy	3(3-0-6)
202100	BIOL 100	Biology in Everyday Life	3(3-0-6)
702101	FINA 101	Finance for Daily Life	3(3-0-6)
851100		Introduction to Communication	3(3-0-6)
888104	DIN 104	Introduction to Internet of Things	

Active Citizen

201115	SC 115	Life and Energy	3(3-0-6)
801100	ARCT 100	Architecture in Everyday Life	3(3-0-6)

Remark: Students who have taken equivalent general education courses from other universities may be allowed to transfer the course credits to fulfill the program requirement with consent from the Department of Mechanical Engineering.

2. Field of Specialization **a minimum of** **109 credits**

2.1 Core Courses **50 credits**

203162	CHEM 162	General Chemistry for Engineering Students	3(3-0-6)
203167	CHEM 167	General Chemistry Laboratory for Engineering Students	1(0-3-0)
206161	MATH 161	Calculus for Engineering 1	3(3-0-6)
206162	MATH 162	Calculus for Engineering 2	3(3-0-6)
206261	MATH 261	Calculus for Engineering 3	3(3-0-6)
206362	MATH 362	Applied Differential Equation for Engineers	3(3-0-6)
207105	PHYS 105	Physics for Engineering and Agro-Industry Students 1	3(3-0-6)
207106	PHYS 106	Physics for Engineering and Agro-Industry Students 2	3(3-0-6)
207115	PHYS 115	Physics Laboratory for Engineering and Agro-Industry Students 1	1(10-3-0)
207116	PHYS 116	Physics Laboratory for Engineering and Agro-Industry Students 2	1(0-3-0)
252285	EE 285	Fundamentals of Electrical Engineering for Mechanical Engineers	3(3-0-6)
252286	EE 286	Fundamentals of Electrical Engineering Laboratory for Mechanical Engineers	1(0-3-0)
254206	ME 206	Engineering Dynamics 1	3(3-0-6)
254207	ME 207	Modeling and Graphics for Mechanical Engineering Design	3(2-3-4)
254302	ME 302	Mechanical Engineering Computational Methods	4(3-3-6)
259103	ENGR 103	Engineering Materials	3(3-0-6)
259104	ENGR 104	Engineering Drawing	3(2-3-4)
259107	ENGR 107	Engineering Mechanics 1	3(3-0-6)
259201	ENGR 201	Computer Programming for Engineers	3(2-3-4)

2.2 Major **a minimum of** **59 credits**

at least 36 credits in 2.2.1 and 2.2.2 must be courses of 300-level courses or higher and within these 36 credits must be 400-level courses or higher at least 18 credits.

2.2.1 Required Courses **53 credits**

254215	ME 215	Mechanics of Solids 1	3(3-0-6)
254216	ME 216	Mechanics of Solids 2	3(3-0-6
254222	ME 222	Mechanics of Machinery 1	3(3-0-6)
254231	ME 231	Engineering Thermodynamics 1	3(3-0-6)
254232	ME 232	Engineering Thermodynamics 2	3(3-0-6)
254271	ME 271	Material Property Laboratory for Machine Design Application	1(0-3-0)
254325	ME 325	Machine Design 1	3(3-0-6)
254333	ME 333	Fluid Mechanics	3(3-0-6)
254334	ME 334	Heat Transfer	3(3-0-6)
254362	ME 362	Manufacturing Process for Mechanical Engineering	3(3-0-6)
254371	ME 371	Mechanical Engineering Laboratory [1]	1(0-3-0)
254372	ME 372	Instrumentation	3(2-3-4)
254373	ME 373	System Analysis and Control	3(3-0-6)
254398	ME 398	Special Study for Cooperative Education	3(0-18-0)
254421	ME 421	Mechanical Vibration	3(3-0-6)
254435	ME 435	Combustion	3(3-0-6)
254441	ME 441	Refrigeration	3(3-0-6)
254498	ME 498	Co-Operative Education	6

2.2.2 Major Electives **a minimum of** **6 credits**

Selected from below list and must be 400-level courses or higher at least 3 credits

254252	ME 252	Automotive Technology	2(1-3-2)	
254352	ME 352	Internal Combustion Engines	3(3-0-6)	
254411	ME 411	Advanced Mechanics of Solids	3(3-0-6)	
254412	ME 412	Introduction to Fiber-Reinforced Materials	3(3-0-6)	
254413	ME 413	Introduction to Contact Mechanics	3(3-0-6)	
254414	ME 414	Mechanics of Granular Materials	3(3-0-6)	
254415	ME 415	Mechanics of Wood	3(3-0-6)	
254422	ME 422	Introduction to Finite Element Method	3(2-3-4)	
254423	ME 423	Fracture Mechanics	3(3-0-6)	
254424	ME 424	Machine Design 2	3(3-0-6)	
254425	ME 425	Modeling of Mechanical Systems	3(3-0-6)	
254426	ME 426	Mechanics of Machinery 2	3(3-0-6)	
254427	ME 427	Mechanism Analysis and Synthesis	3(3-0-6)	
254428	ME 428	Design of Mechanical Systems	3(3-0-6)	
254429	ME 429	Engineering Dynamics 2	3(3-0-6)	
254431	ME 431	Gas Dynamics	3(3-0-6)	
254433	ME 433	Advanced Mechanics of Fluids	3(3-0-6)	
254434	ME 434	Advanced Heat Transfer	3(3-0-6)	
254436	ME 436	Tribology	3(3-0-6)	
254438	ME 438	Computational Fluid Dynamics and Heat Transfer	3(3-0-6)	
254439	ME 439	Flight Mechanics	3(3-0-6)	
254442	ME 442	Air Conditioning	3(3-0-6)	
254443	ME 443	Solar Energy Thermal Processes	3(3-0-6)	
254444	ME 444	Design of Thermal Systems	3(3-0-6)	
254445	ME 445	Basic Aerodynamics	3(3-0-6)	
254446	ME 446	Thermal Equipment in Industries	3(3-0-6)	
254451	ME 451	Power Plant Engineering	3(3-0-6)	
254452	ME 452	Automotive Engineering	3(3-0-6)	
254453	ME 453	Gas Turbines	3(3-0-6)	
254454	ME 454	Steam Power Plant	3(3-0-6)	
254455	ME 455	Nuclear Engineering	3(3-0-6)	
254456	ME 456	Energy Conservation	3(3-0-6)	
254457	ME 457	Rocket and Propulsion Engineering	3(3-0-6)	
254458	ME 458	Efficiency Improvement in Thermal Energy Systems	3(3-0-6)	
254459	ME 459	Sustainable Energy	3(3-0-6)	254461
ME 461	Robotic Engineering		3(3-0-6)	
254462	ME 462	Soft Computing Techniques	3(3-0-6	
254463	ME 463	Computer Aided Design and Computer Aided Manufacturing for Mechanical Engineers	3(2-2-5)	
254464	ME 464	Flow in Plastic Injection Process	3(3-0-6)	
254465	ME 465	Plastic Part Design for Mechanical Engineering	3(3-0-6)	
254466	ME 466	Mechatronics for Mechanical Engineering Students	3(3-0-6)	
254467	ME 467	Digital Control and Signal Processing for Mechanical Engineering	3(3-0-6)	
254473	ME 473	Fluid Power Systems	3(3-0-6)	
254476	ME 476	Turbomachines	3(3-0-6)	
254477	ME 477	Conveying Systems	3(2-3-4)	
254478	ME 478	Engineering Piping Systems	3(3-0-6)	
254492	ME 492	Seminar in Mechanical Engineering	3(3-0-6)	
254494	ME 494	Special Topic in Mechanical Engineering 1	3(3-0-6)	
254495	ME 495	Special Topic in Mechanical Engineering 2	3(3-0-6)	
254496	ME 496	Special Topic in Mechanical Engineering 3	3(3-0-6)	
254497	ME 497	Special Topic in Mechanical Engineering 4	3(3-0-6)	

2.3 Minor (if any)

According to Chiang Mai University's regulations on minor curricula, if students choose to have a minor degree at Chiang Mai University, they can register for courses with at least 15 credits, conditional on their academic advisor's approval. Hence, total credits for the whole curriculum increases by at least 15 credits.

3) Free Elective **a minimum of** **30 credits**

Any courses, except those offered by the Mechanical Engineering Department, can be selected with approval from the student's academic advisor