

# Bachelor of Engineering Program in Aerospace Engineering

## Program Structure

Total Number of Credits Required for Graduation is at least 148 CREDITS

<b>1. General Education</b>	<b>at least</b>	<b>30</b>	<b>credits</b>	
– Wellness		at least	6	Credits
– Entrepreneurship		at least	3	Credits
– Language and Communication			13	Credits
– Thai Citizen and Global Citizen		at least	5	Credits
– Aesthetics		at least	3	Credits
<b>2. Specific Courses</b>	<b>at least</b>	<b>112</b>	<b>Credits</b>	
– Basic Courses		at least	51	Credits
Basic Mathematics and Science			21	Credits
Basic Engineering			30	Credits
– Major Courses		at least	61	Credits
Required Courses			48	Credits
Engineering Electives		at least	13	Credits
<b>3. Free Electives</b>	<b>at least</b>	<b>6</b>	<b>Credits</b>	

## Course List

<b>1. General Education</b>	<b>at least</b>	<b>30</b>	<b>credits</b>
<b>1.1 Wellness</b>	<b>at least</b>	<b>6</b>	<b>Credits</b>
01175xxx Physical Education Activities			1(0-2-1)
and choose at least 5 credits from this category.			
<b>1.2 Entrepreneurship</b>	<b>at least</b>	<b>3</b>	<b>Credits</b>
Choose at least 3 credits from this category.			
<b>1.3 Language and Communication</b>		<b>13</b>	<b>Credits</b>
01999021 Thai language for Communication			3(3-0-6)
01355xxx English			9
Information/Computer			1
<b>1.4 Thai Citizen and Global Citizen</b>	<b>at least</b>	<b>5</b>	<b>Credits</b>
01999111 Knowledge of the Land			2(2-0-4)
and choose at least 3 credits from this category.			
<b>1.5 Aesthetics</b>	<b>at least</b>	<b>3</b>	<b>Credits</b>
Choose at least 3 credits from this category.			
<b>2. Specific Courses</b>	<b>at least</b>	<b>112</b>	<b>Credits</b>
<b>2.1 Basic Courses</b>		<b>51</b>	<b>Credits</b>
– <u>Basic Mathematics and Science</u>	21	Credits	
01403114 Laboratory in Fundamentals of General Chemistry			1(0-3-2)
01403117 Fundamentals of General Chemistry			3(3-0-6)
01417167 Engineering Mathematics I			3(3-0-6)
01417168 Engineering Mathematics II			3(3-0-6)
01417267 Engineering Mathematics III			3(3-0-6)
01420111 General Physics I			3(3-0-6)
01420112 General Physics II			3(3-0-6)
01420113 Laboratory in Physics I			1(0-3-2)
01420114 Laboratory in Physics II			1(0-3-2)

– <u>BasicEngineering</u>		30	Credits
01204111	Computers and Programming		3(2–3–6)
01205201	Introduction to Electrical Engineering		3(3–0–6)
01205202	Electrical Engineering Laboratory I		1(0–3–2)
01208111	Engineering Drawing		3(2–3–6)
01208201	Basic Principles of Engineering Mechanics		3(3–0–6)
01208281	Workshop Practice		1(0–3–2)
01208381	Mechanical Engineering Laboratory		1(0–3–2)
01213211	Materials Science for Engineers		3(3–0–6)
01215221	Aircraft Structures I		3(3–0–6)
01215231	Aerothermodynamics		3(3–0–6)
01215241	Fluid Mechanics in Aerospace Engineering		3(3–0–6)
01215353	Manufacturing Processes for Aircraft Materials		3(3–0–6)

**2.2MajorCourses** **61 Credits**

– <u>Required Courses</u>		48	Credits
01215211	Introduction to Aerospace Engineering		2(1–2–3)
01215213	Computational Methodsand Statistics in Aerospace Engineering		3(2–3–6)
01215232	Aerothermodynamics of Aircraft Engines		3(3–0–6)
01215251	CAD/CAM for Aerospace Engineering		3(3–0–6)
01215261	Aircraft Aerodynamics and Performance		3(3–0–6)
01215311	Aerospace Engineering Laboratory I		1(0–3–2)
01215312	Mechanics of Machinery in Aerospace Engineering		3(3–0–6)
01215323	Aircraft Vibration		3(3–0–6)
01215331	Heat Transfer in Aerospace Engineering		3(3–0–6)
01215341	Fundamental of AerodynamicsI		3(3–0–6)
01215351	Aircraft Conceptual Design		3(3–0–6)
01215362	Aircraft Stability and Control		3(3–0–6)
01215381	Space Flight		3(3–0–6)
01215433	Design of Aircraft Propulsive Systems		3(3–0–6)
01215452	Aircraft Mechanical Design		3(3–0–6)
01215461	Automatic Flight Control I		3(3–0–6)
01215495	Aerospace Engineering Project Preparation		1(0–3–2)

01215499 Aerospace Engineering Project 2(0-6-3)

- Engineering Electives at least 13 Credits

Choose at least 13 credits from this category subjects by choosing at least 1 subject from working skill development courses and at least 1 subject from computer aided engineering courses.

- Working Skill Development Courses

01215399 Internship 1

01215490 Co-operative Education 7

- Computer Aided Engineering Courses

01215421 Computational Structural Mechanics 3(3-0-6)

01215441 Computational Fluid Dynamics 3(2-3-6)

- Aerospace Engineering Courses

01215313 Aerospace Engineering Statistics 3(3-0-6)

01215322 Aircraft Structures II 3(3-0-6)

01215344 Fundamental of Aerodynamics II 3(3-0-6)

01215371 Management for Aerospace Engineers 3(3-0-6)

01215372 Production and Quality Engineering 3(3-0-6)

01215411 Introduction to Optimization in Aerospace Engineering 3(3-0-6)

01215412 Data Science for Aerospace Engineering 3(3-0-6)

01215413 Machine Learning for Aerospace Engineering 3(3-0-6)

01215422 Structural Dynamics 3(3-0-6)

01215424 Nondestructive Testing in Aerospace Engineering 3(3-0-6)

01215425 Mechanics of Composite Materials 3(3-0-6)

01215435 Aircraft Engine Technology 3(3-0-6)

01215436 Advance Aircraft Engine Combustion 3(3-0-6)

01215445 Introduction to Boundary Layer Aerodynamics 3(3-0-6)

01215446 Industrial and Vehicle Aerodynamics 3(3-0-6)

01215448 Introduction to Mini and Micro Air Vehicles 3(3-0-6)

01215449 Experimental Aerodynamics 3(2-3-6)

01215462 Automatic Flight Control II 3(3-0-6)

01215463 Aircraft Systems 3(3-0-6)

01215464 Aircraft Air Conditioning and Pressurization Systems 3(3-0-6)

01215465 Aircraft Instruments 3(3-0-6)

01215471	Aerospace Organization Management	3(3-0-6)
01215472	Aerospace Organization Behavior	3(3-0-6)
01215473	Aircraft Maintenance Management	3(3-0-6)
01215474	Aviation System Life Cycle Cost Analysis	3(3-0-6)
01215475	Project Management for Aircraft Design and Development	3(3-0-6)
01215481	Space Technology and Applications	3(3-0-6)
01215482	Space Mission Analysis and Design	3(3-0-6)
01215496	Selected Topics in Aerospace Engineering	1-3
01215497	Seminar	1
01215498	Special problems	1-3
- <u>Aviation Technology Management Courses</u>		
01225361	Aviation Logistics and Supply Chain Management	3(3-0-6)
01225371	Airline Operations and Management	3(3-0-6)
01225372	Airport Operations and Management	3(3-0-6)
- <u>Rail Engineering Courses</u>		
01200431	Principles of Rail Engineering	3(3-0-6)
01200432	Rolling Stock Technology	3(3-0-6)
01200433	Signalling and Telecommunication Systems	3(3-0-6)
01200434	Rail Infrastructure	3(3-0-6)
01200435	Rail System Operation and Maintenance	3(3-0-6)

### 3. Free Electives

**at least 6 Credits**