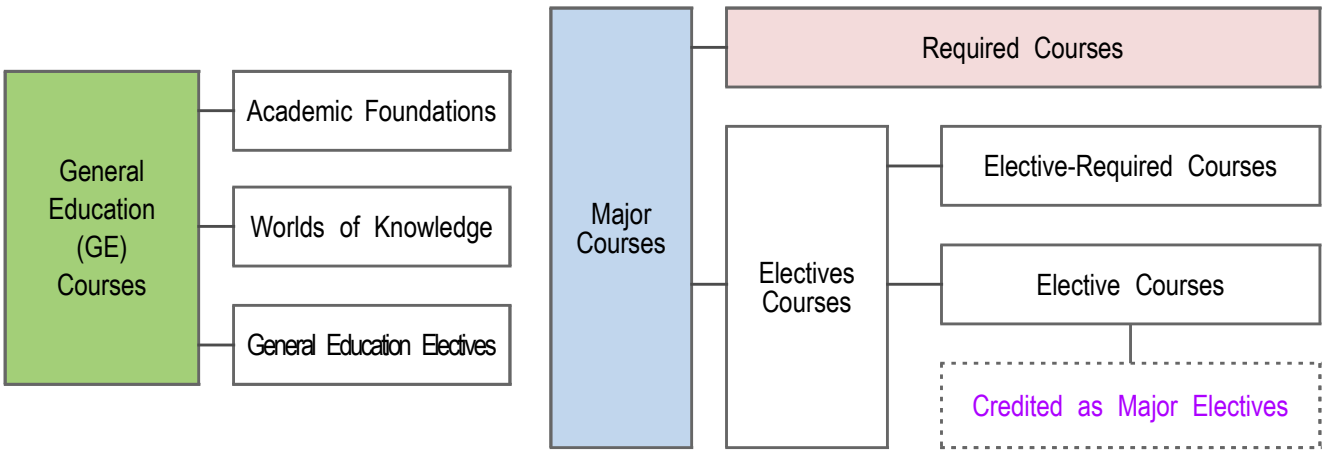
Department of Mechanical & Aerospace Engineering Entering Class of 2014

DEGREE REQUIREMENTS FOR UNDERGRADUATE STUDENTS

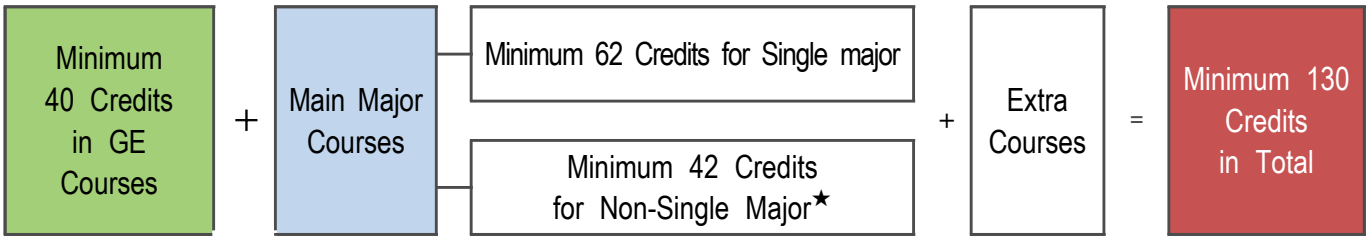
College of Engineering, Seoul National University

I Course Classification



※ Credited as Major Electives for Dept. of Mechanical and Aerospace Engineering Major Courses for College of Engineering & College of Natural Sciences, Below Designated 10 Subjects for Department of Business Administration
- 251.101 Principles of Management, 251.204A Intermediate Accounting 1, 251.205 Principles of Accounting, 251.209 Organizational Behavior, 251.215 Organization Structure, 251.301 Financial Management, 251.303 Human Resource Management, 251.332 Contemporary Management Theories, 251.321 Marketing Management, 251.322 International Business Management

II Credit Requirements



★ Double Majors, Minors, Interdisciplinary Majors, Combined Minors and Student-designed Minors

※ Academic Rules in SNU - Article 83 (Credits to earn)

① Students are allowed to earn credits when they receive a D— or above for a course. Students must obtain above 2.0 in overall GPA & GPA for Major Courses (including Double majors, Minors, interdisciplinary majors, combined minors and student-designed minors) to graduate

※ Academic Rules in SNU – Article 7 (Credits per semester)

① Maximum 18 credits per semester are alloeded to take.

② Maximum 21 Credits per semester are allowded to take for students who received GPA 3.3 or higher for the Previous 2 semesters each.

※ Academic Rules in College of Engineering

Students must take 3 courses conducted in Foreign Language including 1 Major course (Excluding 'College English')

III GE Course Requirements

GE		Minimum 40 Credits			
Categories	Areas	Required courses [Yr.-Sem.]	Credits		Comments
Academic Foundations	Critical Thinking and Writing	[1-2] College Writing: Process & Structure	3		
	Foreign Languages	[1-1,2] 2 courses or more	4-6		• Students with a TEPS score of 900 and below upon matriculation must take at least one English course.
	Mathematical Sciences	[1-1] Calculus 1 or Honor Calculus and Practice 1	3		
		[1-2] Calculus 2 or Honor Calculus and Practice 2	3		
		[2-1] Engineering Mathematics 1	3		
		[2-2] Engineering Mathematics 2	3		
	Natural Sciences	[1-1] (Honor) Physics 1, Physics Lab. 1	4		• Students taking (Honor) Physics 1, 2, Chemistry 1·2, Biology 1·2, Chemistry, Biology, (Statistics) must take corresponding labs concurrently. • Students who didn't complete Physics 1,2 (or Chemistry 1, 2) in High school may take Foundation of Physics 1, 2 (or Foundation of Chemistry 1, 2) instead of Physics 1, 2(or Chemistry 1, 2). Note that Physics Lab.1, 2(or Chemistry Lab. 1, 2) must be taken concurrently with .the corresponding courses.
		[1-2] (Honor) Physics 2, Physics Lab. 2	4		
		[1-1,2] 4 Credits or more from among Chemistry 1·2, Biology 1·2, Chemistry, Biology, (Statistics), Chemistry Lab. 1·2, Biology Lab. 1·2, Chemistry Lab., Biology Lab., Statistics Lab.	4		
	Computer and Information Science	[2-1] Digital Computer Concept and Practice	3		
Worlds of Knowledge	Language and Literature		6		• Minimum 6 Credits in at least 2 out of 5 areas(Language and Literature, Culture and Art, History and Philosophy, Politics and Economy, Humans and Society) * Refer to the information below
	Culture and Art			*(3)	
	History and Philosophy				
	Politics and Economy				
	Humans and Society			*(3)	
	Nature and Technology				
	Life and Environment				

※ Numbers in brackets indicate semester scheduling recommendations.

* For students entered in 2014 and thereafter, the required 3 credits in 'Courses for Entrepreneurship' can be substituted with courses in 'Humans and Society' from <Worlds of Knowledge>, and the required 3 credits in 'Courses for Creativity' can be substituted with courses in 'Culture and Art' from <Worlds of Knowledge>.

※ Although (Statistics), (Statistics Lab.) are included in Mathematical Sciences, they are counted towards Natural Sciences credit requirements.

※ When students are exempt from taking 'Fundamentals of Computer System, Digital Computer Concept and Practice', they are recognized as fulfilling the minimum credit requirements in Academic Foundations (Computer and Information Science) even when the students did not earn the required credits. Regardless, students must meet the minimum general education credit requirements.

※ Aside from the above General Education requirements, the students entered in 2013 and thereafter must earn 3 credits from both 'Courses for Entrepreneurship' and 'Courses for Creativity', which are designated by College of Engineering, totaling 6 credits . (Students must consult with the department about the requirement)

Group	Subjects
Subjects for Entrepreneurship	(GE) 046.018 Technology and Enterprise (GE) 054.027 Entrepreneurship and Economy (GE) 046.017 Technology and Economy (GE) 054.025 Engineering Ethics and Leadership (GE) 054.028 Patent and Technology Entrepreneurship (Major) 400.212 Technology and Entrepreneurship (Major) 400.025 Modern Technology and Ethical Thinking (Major) 400.513 History of Engineering and Technology (Major) 400.213 Innovation and Creativity Practice (Major) 400.214 Engineering Frontiers and Leadership
Subjects for Creativity	(GE) 054.019 A Glance at Korean Contemporary Urbanism and Architecture (GE) 054.021 Creativity and Design (GE) 054.022 Technology and Art: Exhibit·Art·Engineering (GE) 054.020 The Science of Sound, and Experience of Music Instrument Design and Evaluation (Major) 400.018 Creative Engineering Design (Major) 400.318 Digital Art Engineering (Major) 406.549 Creative Technology Intelligence (Major) 406.324A Creative Thinking for Engineers

IV Major Course Requirements in Mechanical Engineering

Recommended Tracks for Undergraduate Majors in Mechanical Engineering

Yr./Sem	Spring Semester		Fall Semester	
1st			400.018	Creative Engineering Design
2nd	M2794.001000* (446.201A)	Solid Mechanics*	400.003	Engineering Mathematics 3
	M2794.001100* (446.202A)	Thermodynamics*	M2794.001400 (446.203A)	Mechanics and Design
			M2794.001200* (446.204A)	Dynamics*
			M2794.001300* (446.205A)	Fluid Mechanics*
3rd	M2794.001500* (446.302) or M2794.001600* (446.304)	Mechanical Engineering Lab. 1* or Mechanical Engineering Lab. 2*	M2794.001500* (446.302) or M2794.001600* (446.304)	Mechanical Engineering Lab. 1* or Mechanical Engineering Lab. 2*
	M2794.001700* (446.303A)	Mechanical Product Design*	M2794.001800* (446.305B)	Materials and Manufacturing Processes*
	M2794.001900 (446.307C)	Mechanical Vibrations	M2794.002100 (446.310)	Theories of Control System
	M2794.002000 (446.308A)	Applied Fluid Mechanics	M2794.002200 (446.311A)	Applied Thermodynamics
	M2794.002300 (446.312)	Internal Combustion Engines	M2794.002400 (446.326A)	CAD/CAM
	M2794.002500 (446.328)	System Analysis in Mechanical Engineering	M2794.002900 (446.355)	MEMS in Mechanical Engineering
	M2794.002600 (446.343)	Heat Transfer		
	M2794.002700 (446.345)	Introduction to Robot Engineering		
	M2794.002800 (446.353)	Introduction to Sensors		
	Required 1 Subject from among below 4 Extradepartmental Courses 400.015 Introduction to Industrial Engineering, 400.019A Introduction to Electrical and Computer Engineering, 400.020 Introduction to Materials Science and Engineering, 400.023 Introduction to Chemical and Biological Engineering			
4th	M2794.003000 (446.401A)	Computer Simulation and Design	M2794.003100 (446.402B)	Mechatronics System Design and Laboratory
	M2794.003200 (446.405A)	Environmental Thermodynamics	M2794.003300 (446.406)	Automotive Engineering
	M2794.003600 (446.427A)	Optimal Design	M2794.003400 (446.414A)	Optimal Design of Energy Systems
	M2794.003700 (446.451)	Introduction to Sound System Engineering	M2794.003500 (446.422A)	Micro Manufacturing
	M2794.003800 (446.453)	Flow and Design	M2794.003900 (446.464)	Flow in Life Systems
	M2794.004000 (446.467)	Micro-nano Mechanics	M2794.004300 (446.472)	Mechanical System Design Project 2
	M2794.004200 (446.471)	Mechanical System Design Project 1	M2794.004400 (446.475)	Integrated Mechanical Design and Analysis
	M2794.004500 (446.476A)	Management in Mechanical Engineering 1	M2794.004600 (446.477)	Management in Mechanical Engineering 2
			M2794.004700 (446.478)	Biomechanics and its Applications in Mechanical Engineering

※ Recommended Tracks for Undergraduates in Mechanical Engineering are applied to Students admitted in and after 2014. Students admitted in or before 2013 must follow the previous Recommended Tracks.

※ Course Requirements for Mechanical Engineering

① Students must take 400.018 Creative Engineering Design

② Students must take 1 Subject from below 4 Extradepartmental Courses
- 400.015 Introduction to Industrial Engineering
- 400.019A Introduction to Electrical and Computer Engineering
- 400.020 Introduction to Materials Science and Engineering
- 400.023 Introduction to Chemical and Biological Engineering

③ Students must take 3 Subjects from below 6 Subjects.
- M2794.001400(446.203A) Mechanics and Design
- M2794.002500(446.328) System Analysis in Mechanical Engineering
- M2794.002600(446.343) Heat Transfer
- M2794.004000(446.467) Micro-nano Mechanics
- M2794.003100(446.402B) Mechatronics System Design and Laboratory
- M2794.002000(446.308A) Applied Fluid Mechanics

④ Students must take M2794.004200(446.471) Mechanical System Design Project 1, M2794.004300(446.472) Mechanical System Design Project 2. (1 subject per semester)

⑤ Students must follow Regulations for Dept. of in Mechanical & Aerospace Engineering

The above Course Requirements apply to Students admitted in 2014, Students admitted in or before 2013 must follow the previous Requirements.

※ Course Requirements for Double Majors & Course Requirements for Minor : Students must follow Regulations for Dept. of in Mechanical & Aerospace Engineering or Major in Mechanical Engineering.

V Major Course Requirements in Aerospace Engineering

Recommended Tracks for Undergraduate Majors in Aerospace Engineering

Yr./Sem	Spring Semester		Fall Semester	
1st Yr.			400.018	Creative Engineering Design
2nd Yr.	M2795.008600*	Solid Mechanics in Aerospace Engineering 1*	M2795.001800* (446.323A)	Aerodynamics*
	M2795.002000*	Aerospace Thermodynamics*	M2795.002100*	Dynamics*
	M2795.002200*	Introduction to Aerospace Engineering*	M2795.008700	Solid Mechanics in Aerospace Engineering 2
3rd Yr.	M2795.002300* (446.321)	Compressible Fluid Flow*	M2795.002500* (446.340)	Jet Propulsion*
	M2795.002600* (446.341)	Principles of Flight Vehicle Control*	M2795.002400* (446.322)	Mechanics of Aerospace Structures*
	M2795.002700*	Aerospace Engineering Lab. 1*	M2795.002800*	Aerospace Engineering Lab. 2*
	M2795.002900 (446.324)	Aircraft and Spacecraft Vibrations	M2795.003300 (446.357)	Aerospace Sensor Systems
	M2795.003100	Linear Algebra for Aerospace Engineering	M2795.003400 (446.358)	Introductory Engineering Probability
	M2795.003200 (446.325)	Space Dynamics		
	Required 1 Subject from among below 4 Extradepartmental Courses - 400.015 Introduction to Industrial Engineering, 400.019A Introduction to Electrical and Computer Engineering, 400.020 Introduction to Materials Science and Engineering, 400.023 Introduction to Chemical and Biological Engineering			
4th Yr.	M2795.003000	Aerospace Combustion	M2795.003800 (446.432)	Aircraft Conceptual Design
	M2795.003700 (446.435)	Noise Engineering	M2795.004500 (446.452)	Flight Dynamics and Control
	M2795.003600	Viscous Fluid Flow	M2795.003500	Fundamentals of Computational Fluid Dynamics
	M2795.004100 (446.479)	Micro and Nanotechnology for Aerospace Systems	M2795.003900	Spacecraft Mission Analysis and Design
	M2795.004400 (446.456)	High Energy Thermofluid Dynamics	M2795.004200	Applied Mathematics for Aerospace Engineering
	M2795.008300	Computational Structural Analysis	M2795.004300 (446.439)	Rocket Propulsion
	M2795.004700	Artificial Satellite Engineering	M2795.004600 (446.433B)	Air Traffic Control and Navigation System
	M2795.008200 (446.455)	Helicopter Engineering	M2795.004800	Telecommunications and Sensing
	M2795.004900 (446.473A)	Integrated Design of Aerospace System 1	M2795.005000 (446.474A)	Integrated Design of Aerospace System 2

※ Recommended Tracks for Undergraduates in Mechanical Engineering are applied to Students admitted in and after 2014. Students admitted in or before 2013 must follow the previous Recommended Tracks.

※ Course Requirements for Aerospace Engineering

① Students must take 400.018 Creative Engineering Design

② Students must take 1 Subject from below 4 Extradepartmental Courses
- 400.015 Introduction to Industrial Engineering
- 400.019A Introduction to Electrical and Computer Engineering
- 400.020 Introduction to Materials Science and Engineering
- 400.023 Introduction to Chemical and Biological Engineering

③ Students must take M2795.002700 Integrated Design of Aerospace System 1, M2795.002800 Integrated Design of Aerospace System 2.

④ Students must follow Regulations for Dept. of in Mechanical & Aerospace Engineering or Major in Mechanical Engineering.

The above Course Requirements apply to Students admitted in 2014, Students admitted in or before 2013 must follow the previous Requirements.

※ Course Requirements for Double Majors & Course Requirements for Minor : Students must follow Regulations for Dept. of in Mechanical & Aerospace Engineering or Major in Mechanical Engineering.

