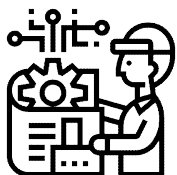


# Department of Mechanical Engineering

## [기계공학과]

### ■ Department Introduction [학과소개]



Mechanical Engineering deals with numerous systems and has a variety of important applications such as automobiles, aircraft, ships, home appliances, electronic devices, power plants and so on. The mechanical systems and the fundamental science and technology of mechanical and aerospace engineering have made dramatic advances and high impacts on the global economies and the standard of living. In the track of mechanical and aerospace engineering, students are educated and trained to learn the underlying principles of mechanical and aerospace engineering and to apply the knowledge to real-world examples and case studies hands-on. Disciplines include thermodynamics, fluid mechanics, solid mechanics, dynamics, machine design, advanced materials processing, laser-assisted manufacturing, micro/nano machining, unmanned vehicle control, MEMS, biomedical products, controls and mechatronics, acoustics, tribology and so on.

### 1. Graduation Requirement [졸업 이수요건]

Category 구분		Credits 이수학점	Remarks 비고	Subtotal 소계
Basic 기초	Required 필수	17	Calculus I(3), General Physics I(3), General Chemistry I(3), General Biology(3), Introduction to AI Programming I(3), General Chemistry Lab I(1), General Physics Lab I(1) (Total 17 credits)	At least 30 Credits
	Elective 선택[학과 지정]	13	Complete basic elective courses at least 13 credits including Applied Linear Algebra(3) and Differential Equations(3)	
Major 전공	Required 필수	27	Refer to Required course list below	At least 48 Credits
	Elective 선택	21	Refer to Elective course list below	
	Internship 인턴십	3	Internship (Choose one among Research, Industrial, Venture Creation, Co-op)	3 Credits
Free Elective 자유선택		19	All courses acceptable	At least 19 Credits

\* For Liberal Arts and Leadership requirements, refer to school Common requirements

## 2. Basic Requirements [기초 이수요건]

No.	Course Code	Course Title	Major 전공	Double Major 복수전공	Minor 부전공
			13 credits	6 credits	-
1	MTH112	Calculus II (3)	○		
2	PHY103	General Physics II (3)	○		
3	CHM102	General Chemistry II (3)	○		
4	PHY108	General Physics Lab II (1)	○		
5	CHM106	General Chemistry Lab II (1)	○		
6	MTH201	Differential Equations (3)	●	●	
7	MTH203	Applied Linear Algebra (3)	●	●	
8	MTH211	Statistics (3)	○		
9	MGT102	Entrepreneurship (3)	○		
10	IE101	Introduction to Data Science(3)	○		
11	ITP117	Introduction to AI Programming II(3)	○		
12	ITP111	Probability & Random Process (3)	○		
13	ITP112	Discrete Mathematics (3)	○		
14	UNI101	Understanding Major (1) <b>Mechanical Engineering and Future</b>	○		

●: Required ○: Elective ●: Recommended, ( ): credits

## 3. Curriculum [기계공학과 교육과정]

### ▶ Credit Requirements [이수학점]

Department (School)	Major(전공)			Double Major(복수전공)			Minor(부전공)		
	R	E	Total	R	E	Total	R	E	Total
Department of Mechanical Engineering	27	21	48	18	18	36	9	9	18

\*R: Required, E: Elective

### ▶ Required [전공필수]

Course Code	Course Title	Major	Double	Minor	Cred -Lect -Exp.	Remarks	Semester
MEN210	Thermodynamics 열역학	○	○	○	3-3-0		1
MEN220	Fluid Mechanics 유체역학	○	○	○	3-3-0	[PRE] MEN220	2
MEN230	Solid Mechanics I 고체역학 I	○	○	○	3-3-0		1
MEN231	Solid Mechanics II 고체역학 II	○	○	○	3-3-0	[PRE] MEN230	2
MEN250	Mechanical Drawing and Lab 기계제도 및 실습	○	○	○	3-2-2		1
MEN270	Dynamics 동역학	○	○	○	3-3-0		2
MEN300	Mechanical Engineering Lab I 기계공학실험 I	○	○	○	3-1-4	[PRE] MEN231, MEN310	2
MEN310	Heat Transfer 열전달	○	○	○	3-3-0	[PRE] MEN210, MEN220	1

Course Code	Course Title	Major	Double	Minor	Cred -Lect -Exp.	Remarks	Semester
MEN490	Thesis Study 졸업연구	○			3-0-6		1,2

※ Double Major: Take 6 courses(18 credits) among above courses excluding MEN490 Thesis Study.

복수전공: 졸업연구를 제외한 8과목 중 최소 6과목(18학점) 이수

※ Minor: Take 3 courses(9 credits) among above excluding MEN490 Thesis Study.

부전공: 졸업연구를 제외한 8과목 중 최소 3과목(9학점) 이수

※ Courses that are not required for Minor/Double Major can be counted as Elective course.

복수전공자, 부전공자에게 필수로 인정되지 않는 전공필수 과목을 이수했을 경우 전공선택으로 인정가능

### ▶ Elective [전공선택]

Course Code	Course Title	Major	Double	Minor	Cred -Lect -Exp.	Remark	Semester
MEN211	Applied Thermodynamics 응용열역학	○	○	○	3-3-0	[PRE] MEN210	2
MEN301	Numerical Analysis 수치해석	○	○	○	3-2-2	[PRE] MTH201	2
MEN302	Introduction to Finite Element Method 유한요소법개론	○	○	○	3-3-0	[PRE] MEN231	2
MEN303	Applied Engineering Mathematics 응용공학수학	○	○	○	3-3-0		1
MEN320	Applied Fluid Mechanics 응용유체역학	○	○	○	3-3-0	[PRE] MEN220	1
MEN350	Manufacturing Processes and Lab 기계공학작법 및 실습	○	○	○	3-2-2	[PRE] MEN230	1
MEN351	Machine Element Design 기계요소설계	○	○	○	3-3-0	[PRE] MEN231	2
MEN352	Creative Engineering Design I (Capstone Design) 창의적공학설계 I (캡스톤디자인)	○	○	○	3-1-4		2
MEN353	Manufacturing System Design & Simulation 생산시스템 설계 및 시뮬레이션	○	○	○	3-3-0		2
MEN370	Dynamic Systems and Control 시스템제어	○	○	○	3-3-0		1
MEN371	System Dynamics 시스템 동역학	○	○	○	3-3-0		1
MEN400	Mechanical Engineering Lab II 기계공학실험 II	○	○	○	3-1-4	[PRE] MEN231, MEN270, MEN310	1
MEN411	Combustion 연소공학	○	○	○	3-3-0	[PRE] MEN210, MEN220	1
MEN412	Air-Conditioning and Refrigeration 공기조화냉동	○	○	○	3-3-0	[PRE] MEN210	2
MEN413	Computational Fluid Dynamics 전산유체역학	○	○	○	3-3-0	[PRE] MEN301, MEN320	2
MEN414	Design of Fluid Thermal Systems 열유체시스템 설계	○	○	○	3-3-0	[PRE] MEN310	2
MEN415	Aerodynamics 공기역학	○	○	○	3-3-0	[PRE] MEN220	1
MEN420	Introduction to Aerosol Technology 에어로졸공학개론	○	○	○	3-3-0	[PRE] MEN220	1
MEN431	Introduction to Plastic Deformation 소성학개론	○	○	○	3-3-0	[PRE] MEN231	1

Course Code	Course Title	Major	Double	Minor	Cred -Lect -Exp.	Remark	Semester
MEN432	Introduction to Mechanics of Composite Materials 복합재역학개론	○	○	○	3-3-0	[PRE] MEN231	1
MEN451	Introduction to MEMS MEMS 개론	○	○	○	3-3-0		2
MEN452	Creative Engineering Design II (Capstone Design) 창의적공학설계 II (캡스톤디자인)	○	○	○	3-1-4		1
MEN453	Computer Aided Engineering 컴퓨터이용공학	○	○	○	3-2-2		1
MEN454	Optimal Design 최적설계	○	○	○	3-2-2		1
MEN455	3D Printing 3D 프린팅	○	○	○	3-3-0		1
MEN456	Artificial Intelligence Based Digital Manufacturing AI 기반 디지털 제조 공학	○	○	○	3-3-0		1
MEN457	Introduction to Electric-Electronic Engineering 전기전자공학개론	○	○	○	3-3-0	[PRE] PHY103	1
MEN461	Introduction to Robotics 로봇공학	○	○	○	3-3-0		2
MEN470	Mechanical Vibration 기계진동학	○	○	○	3-3-0	[PRE] MEN270	2
MEN481	UAV Flight Control and Simulation 무인기 비행제어 및 시뮬레이션	○	○	○	3-3-0	[PRE] MEN270, MEN370	1
MEN482	UAV Navigation and Flight Computers 무인기 항법 및 운용	○	○	○	3-3-0	[PRE] MEN270, MEN370	2
MEN491	Creating Autonomous Car 자율주행 자동차 만들기	○	○	○	3-3-0	[PRE] MEN270, MEN370	1
MEN497	Special Topics in Mechanical Engineering I 기계공학특론 I	○	○	○	3-3-0		-
MEN498	Special Topics in Mechanical Engineering II 기계공학특론 II	○	○	○	3-3-0		-
MEN499	Special Topics in Mechanical Engineering III 기계공학특론 III	○	○	○	3-3-0		-
MSE316	Wearable smart healthcare electronic system 웨어러블 스마트 헬스케어 전자소자 시스템	○	○		3-3-0		

※ [PRE]: Prerequisite(선이수), [IDEN]: Identical(동일지정교과)

#### 4. Curriculum Change [교육과정 변경사항]

2022	→	2023
MEN201 Computational Tools for Engineers 공학전산기법	→	<Closed> Substitute: MEN310
MEN220 Fluid Mechanics 유체역학	→	MEN220 Fluid Mechanics 유체역학 [PRE: MEN210]

5. Curriculum Map [교육과정 이수 체계도]

Sophomore		Junior		Senior		
1 <sup>st</sup> semester	2 <sup>nd</sup> semester	1 <sup>st</sup> semester	2 <sup>nd</sup> semester	1 <sup>st</sup> semester	2 <sup>nd</sup> semester	
Thermodynamics	Applied Thermodynamics	Heat Transfer		Introduction to Aerosol Technology	Air-Conditioning and Refrigeration	Thesis Study
				Introduction to Electric-Electronic Engineering		
Solid Mechanics I	Solid Mechanics II	Manufacturing Processes and Lab	Manufacturing System Design and Simulation	Introduction to Plastic Deformation	Introduction to MEMS	Thesis Study
				Introduction to Mechanics of Composite Materials		
				A.I based Digital Manufacturing		
Mechanical Drawing and Lab			Machine Element Design	Optimal Design		Thesis Study
			Creative Engineering Design I	Creative Engineering Design II		
	Fluid Mechanics	Applied Fluid Mechanics		Combustion	Design and Fluid Thermal Systems	Thesis Study
				Aerodynamics	Computational Fluid Dynamics	
	Dynamics	Dynamic System and Control		3D Printing	Mechanical Vibration	Thesis Study
		System Dynamics		Creating Autonomous Car	Introduction to Robotics	
				UAV Flight Control and Simulation	UAV Navigation and Flight Computers	
Differential Equations	Applied Linear Algebra	Applied Engineering Mathematics	Numerical Analysis	Computer Aided Engineering		Thesis Study
			Introduction to Finite Element Method			
			Mechanical Engineering Lab I	Mechanical Engineering Lab II		