Courses at KAIST

COMMON COURSES: 3 credits and 1 AU (Activity Unit)

CC500	Scientific Writing	3	Credit
CC510	Introduction to Computer Application	3	Credit
CC511	Probability and Statistics	3	Credit
CC512	Introduction to Materials and Engineering	3	Credit
CC522	Introduction to Instruments	3	Credit
CC530	Enterpreneurship and Business Strategies	3	Credit

CC020 Ethics and Safety I (1AU)

MAJOR COURSES: NONE

SELECTIVE MAJOR COURSES: At least 21 credits are required (over 12 credits of mechanical engineering course). In accordance with KAIST's requirements for the MSc program in Mechanical Engineering, students may choose any BSc/MSc advanced level courses from the KAIST course base.

❒ Undergraduate Program

※ Note: 400 and 500 level courses open to both undergraduate and graduate students

Classification	Subject No.	Subject Name	Lecture:Lab.: Credit (Homework)	Semester	Remark
	ME400	Capstone Design Ⅰ	1:6:3	Spring	
	ME401	Capstone Design Ⅱ	1:6:3	Fall	
	ME403	Introduction to Naval Architecture and Ocean Engineering	3:0:3	Spring	
	ME404	Introduction to Simulation of Medical Procedures	3:1:3	Spring	
	ME405	Design Thinking and Entrepreneurship	2:3:3	Spring,Fall	
	ME411	Design of Energy Systems	3:0:3	Fall	
	ME413	Engine Technology	3:0:3	Spring	
	ME414	Applied superconductivity and Thermal Engineering	3:0:3	Fall	
	ME416	Vehicle Dynamics	3:0:3	Spring	
	ME420	Applied Fluid Mechanics	3:0:3	Spring	
	ME430	Introduction to Reliability in Mechanical Engineering Design	3:0:3	Fall	
	ME431	Introduction to Continuum Mechanics	3:0:3	Fall	
	ME432	Deformation, Fracture and Strength of Materials	3:0:3	Spring	
	ME440	Engineering Design via FEM	3:1:3	Spring	
	ME452	Noise Control Engineering	3:0:3	Fall	
	ME453	Introduction to Robotics Engineering	3:0:3	Fall	
	ME460	Automatic Control	3:0:3	Fall	
	ME461	Introduction to Fuel Cell Systems	3:0:3	Srping	
	ME471	Precision Engineering	3:1:3	Fall	
	ME475	Mechanical Engineering and Applied Mathematics	3:0:3	Fall	
	ME480	Introduction to Biomedical Optics	3:0:3	Fall	

	ME481	Introduction to Electromagnetism & Optics	3:1:3	Spring	
	ME484	Structure & Function of Human Body	3:0:3	Fall	
	ME487	Mechanics of cellular movements and mimetics	3:0:3	Spring	
	ME488	Introduction to biomedical machine technology	3:0:3	Fall	
	ME491	Special Topics in Mechanical Engineering	3:0:3	Spring, Fall	
	ME493	Special Topics in Mechanical Engineering Ⅰ	1:0:1	Summer,Winter	
	ME494	Special Topics in Mechanical EngineeringⅡ	2:0:2	Summer,Winter	
Research	ME490	Thesis Study	0:6:3	Spring, Fall	
	ME495	Individual Study	0:6:1	Spring, Fall	
	ME496	Seminar	1:0:1	Spring, Fall	

❒ Graduate Program

Classification	Subject No.	Subject Name	Lecture:Lab.: Credit (Homework)	Semester	Remark
Mandatory General Course	CC010	Special Lecture on Leadership	1:0:0	Spring･Fall	
	CC500	Scientific Writing	3:0:3	Spring･Fall	
	CC510	Introduction to Computer Application	2:3:3	Spring･Fall	
	CC511	Probability and Statistics	2:3:3	Spring･Fall	
	CC512	Introduction to Materials and Engineering	3:0:3	Spring･Fall	
	CC522	Introduction to Instruments	2:3:3	Fall	
	CC530	Entrepreneurship and Business Strategies	3:0:3	Spring	
Elective Course	ME500	Mathematical Methods in Mechanical Engineering	3:0:3	Spring	
	ME502	Introduction to Finite Element Method	3:0:3	Fall	
	ME505	Measurement Instrumentation	3:0:3	Fall	
	ME508	Design and Production of Ocean Systems	3:0:3	Spring	
	ME509	Engineering Mechanics in Ocean Systems	4:0:4	Spring	
	ME510	Advanced Fluid Mechanics	3:0:3	Spring	
	ME511	Advanced Thermodynamics	3:0:3	Spring	
	ME512	Advanced Heat Transfer	3:0:3	Fall	
	ME513	Advanced Combustion	3:0:3	Fall	
	ME514	Multiphase Flow Ⅰ	3:0:3	Fall	
	ME515	Cryogenic Engineering	3:0:3	Spring	
	ME521	Viscous Fluid Flow	3:0:3	Fall	
	ME522	Water Wave Mechanics	3:0:3	Fall	
	ME523	Introduction to Fluid-Structure Interactions	3:0:3	Fall	
	ME524	Ocean Hydrodynamics	3:0:3	Spring	
	ME525	Turbomachinery	3:0:3	Fall	
	ME526	Introduction to Nanotech Processing	3:0:3	Fall	
	ME530	Advanced Mechanics of Solids	3:0:3	Spring	
	ME531	Numerical Stress Analysis	3:1:3	Fall	
	ME532	Advanced analysis of solids and structures	3:0:3	Spring	
	ME533	Fracture Mechanics	3:0:3	Fall	
	ME534	Fatigue Fracture and Strength	3:0:3	Spring	
	ME535	Finite Element Analysis of Structures	3:0:3	Fall	
	ME536	Mechanics of Plastic Deformation	3:0:3	Fall	
	ME537	Optional design of Composite Structures	3:0:3	Spring	

	ME538	Ocean Systems Design	3:0:3	Spring, Fall	
	ME539	Design of Energy Plants and Systems	3:0:3	Fall	
	ME540	Stochastic Theory of Structure System	3:0:3	Spring	
	ME541	Reliability and Risk Analysis for Energy Systems	3:0:3	Spring	
	ME542	Floating Structures	3:0:3	Spring	
	ME543	Optimal Design	3:1:3	Fall	
	ME544	Optimal Design of Ocean Composite Structures	3:0:3	Spring	
	ME545	Theory of Hydrodynamics Lubrication	3:0:3	Spring	
	ME546	Naval Ship Shock Analysis and Design	3:0:3	Fall	
	ME547	Knowledge - Based Design System	3:1:3	Fall	Even Year
	ME548	Knowledge - Based Design System for Ocean System	3:1:3	Spring	
	ME549	Reliability in Microsystems Packaging	3:1:3	Fall	
	ME550	Advanced Dynamics	3:0:3	Fall	
	ME551	Linear Vibration	3:0:3	Spring	
	ME552	Introduction to Acoustics	3:0:3	Spring	
Elective Course	ME553	Robot Dynamics	3:0:3	Spring,Fall	
	ME554	Future energy-utilization engineering	3:0:3	Spring,Fall	
	ME555	Vibration of Offshore Structures	3:0:3	Fall	Even Year
	ME556	Underwater Acoustics	3:0:3	Fall	
	ME558	Dynamics of Offshore Structures	3:0:3	Spring,Fall	
	ME559	Dynamics and Control of Ocean Vehicles	3:0:3	Spring,Fall	
	ME561	Linear System Control	3:0:3	Spring	
	ME562	Digital System Control	3:0:3	Spring	
	ME564	Artificial Neural Network: Theory and Applications	3:0:3	Spring	
	ME565	Artificial Neural Network: Theory and Applications to Ocean Systems	3:0:3	Spring	
	ME567	Introduction to Statistical Thermodynamics	3:0:3	Fall	
	ME568	Ocean VR Simulation	3:0:3	Spring	
	ME570	Advanced Manufacturing Systems	3:0:3	Spring	
	ME571	Marine Production Systems Engineering	3:0:3	Spring	
	ME572	Design and Implementation of Nano Actuation System	2:3:3	Spring	
	ME574	Joining Engineering	3:1:3	Fall	
	ME576	Vehicle Dynamics and Control	3:1:3	Spring	
	ME582	Introduction to Microfabrication Technology	3:0:3	Spring	
	ME583	MEMS Design and Experimental Microfabrication	2:3:3	Fall	
	ME585	Mechanics and Control of Human Movement	3:0:3	Spring	
	ME587	Optomechatronics	3:0:3	Fall	
	ME589	Applied Optics	3:1:3	Spring	
	ME590	Ocean System Innovation	3:0:3	Spring,Fall	
	ME591	Random Data: Analysis and Processing	3:1:3	Fall	
	ME592	Laser: Principles and Applications	3:0:3	Fall	
	ME593	Harbor Engineering	3:0:3	Fall	
	ME594	Ocean Systems Engineering	3:0:3	Spring	
	ME595	Ocean Systems Management	3:0:3	Spring	
	ME596	Shipbuilding and Offshore Plants Management System	3:0:3	Spring	
	ME597	Introduction to renewable ocean energy	3:0:3	Spring	
	ME598	Ocean Nuclear Power: A Challenging Pursuit for Energy Solution	3:0:3	Spring	
	ME599	Ocean Feature-Based Modeling	3:1:3	Spring	
	ME600	Mechanical System Design Project 1	0:9:3	Spring	
	ME601	Mechanical System Design Project 2	0:9:3	Fall	
	ME604	Metrology	2:3:3	Spring	

	ME606	Creative Knowledge Creation Process and Application	3:0:3	Fall	
	ME607	Computational Linear Algebra	3:1:3	Spring	
	ME611	Convective Heat Transfer	3:0:3	Spring	
	ME612	Transport Phenomena	3:0:3	Spring	
	ME613	Computational Fluid Mechanics and Heat Transfer	3:0:3	Fall	
	ME615	Nanoscale Heat Transfer	3:0:3	Spring	
	ME616	Automobile Technology and Environment	3:0:3	Fall	
	ME617	Advanced Vehicle Control Design	3:0:3	Fall	
	ME620	Advanced Ocean Wave Mechanics	3:0:3	Spring,Fall	
	ME621	Turbulence	3:0:3	Spring	
	ME622	Floating Body Dynamics	3:0:3	Spring	
	ME623	Rotating Flow	3:0:3	Fall	
	ME624	Simulation of Ship Hydrodynamics and Waves	3:0:3	Spring	
	ME630	Deepsea Petroleum production Engineering	4:0:4	Fall	
	ME631	Hydro-elasticity	3:0:3	Fall	
	ME632	Theory of Viscoelasticity	3:0:3	Fall	
	ME633	Mechanical Behavior of Polymeric and Composite Materials	3:0:3	Fall	
	ME634	Functional Materials and Structures	3:0:3	Fall	
	ME635	Plastic Analysis and Design of Structures	3:0:3	Fall	
	ME637	Design of Ocean Composite Structures	3:0:3	Fall	
	ME638	Axiomatic Design of Composite Structure	3:0:3	Spring	Biennial
	ME642	Medical Biomechanics	3:0:3	Fall	
	ME644	Tribology	3:0:3	Spring	
	ME647	STEP for Electronic Commerce	3:1:3	Spring	Odd Year
	ME651	Rotor Dynamics	3:0:3	Spring	
	ME652	Mobile Robotics	3:0:3	Fall	
	ME653	Mechanical Signature and System Analysis	3:1:3	Fall	
	ME654	Noise Control	3:0:3	Fall	
	ME655	Robotics Engineering	3:1:3	Fall	
	ME656	Vehicle NVH	3:1:3	Fall	
	ME657	Ocean Dynamic Positioning System	3:0:3	Spring	
	ME658	Engineering System Identification	3:0:3	Spring,Fall	
Elective Course	ME661	Optimal Control	3:0:3	Spring	
	ME662	Design of Precision Actuation System	3:0:3	Spring	
	ME670	Construction of Offshore Structures		Summer,Winter	
	ME671	Product Lifecycle Management System for Ocean System	3:1:3	Spring	
	ME674	Optical Imaging System Design	3:0:3	Fall	
	ME683	Human Robot Interaction: Haptics	3:0:3	Fall	
	ME692	Wave Propagation	3:0:3	Spring	
	ME711	Radiation Heat Transfer	3:0:3	Spring	
	ME721	Ocean Fluid Mechanics Modeling	3:0:3	Spring	
	ME722	Computational Turbulence Modeling	3:0:3	Spring	
	ME724	Stratified Flow	3:0:3	Fall	
	ME730	Design of Light Sandwich Structures	3:0:3	Spring	
	ME731	Nonlinear Computational Mechanics of Solid	3:0:3	Spring	
	ME732	Reliability in Strength Design	3:0:3	Fall	
	ME752	Structure-borne Sound	3:0:3	Fall	
	ME761	Nonlinear System Control	3:0:3	Spring	
	ME762	Adaptive Control System	3:0:3	Spring	
	ME771	Analysis and Design of Metal Forming Processes	3:1:3	Fall	
	ME781	Molecular Dynamics and Nanomechanics	3:0:3	Spring	

	ME800	Special Topics in Mechanical Engineering	3:0:3	Spring,Fall	
	ME801	Special topics in Mechanical Engineering Ⅰ	1:0:1	Summer,Winter	
	ME802	Special topics in Mechanical Engineering Ⅱ	2:0:2	Summer,Winter	
	ME803	Special Topics in Ocean Systems Engineering	3:0:3	Spring,Fall	
	ME804	Special Topics and Design Laboratory of Ocean Systems Engineering	2:3:3	Summer,Winter	
	ME810	Special Topics in Thermal & Fluid Engineering	3:0:3	Fall	
	ME830	Special Topics in Design Engineering	3:0:3	Fall	
	ME850	Special Topics in Dynamics and Control	3:0:3	Spring,Fall	
	ME870	Special Topics in Production Engineering	3:0:3	Spring,Fall	
Research	ME960	M.S. Thesis	0:0:0	Spring,Fall	
	ME964	Individual Research M.S.	0:3:1	S,S,F,W	
	ME966	Seminar (M.S. Program)	1:0:1	Spring,Fall	
	ME967	Individual Research M.S.	1:6:2	Spring,Fall	
	ME968	Seminar of Career Planning for Ocean Engineering	1:0:1	Spring,Fall	
	ME980	Ph.D. Thesis	0:0:0	Spring,Fall	
	ME985	Individual Research Ph.D.	0:3:1	S,S,F,W	
	ME986	Seminar (Ph.D.)	1:0:1	Spring,Fall	