DEPARTMENT OF INDUSTRIAL AND MANAGEMENT ENGINEERING

Program Overview

The Department of Industrial and Management Engineering at Korea University offers the Master of Science Engineering (M.Eng.) and the Doctor of Philosophy (Ph.D.) degrees. These degrees provide students an opportunity to acquire knowledge at a depth beyond the baccalaureate level and to specialize in a particular area of interest. The main objective of our programs is to produce students who can analyze and design complex systems of people, processes, and technology to accomplish organizational goals.

The Department has the following areas of concentration:

Industrial and Management Engineering
Industrial Artificial Intelligence

Department Regulations

1. M.Eng. students must complete 24 credits that include at least 15 credits from the major courses.
2. Ph.D. students must complete 30 credits that include at least 24 credits from the major courses that are not included in their M.Eng. degree. Ph.D. students who earned the M.Eng. degree from the Department can be waived up to 6 credits from those exceeding the 15 major credits required for the M.Eng. degree.
3. Fast-track Ph.D. students must complete 48 credits that include at least 30 credits from the courses offered by the Department.
4. M.Eng., Ph.D., and fast-track Ph.D. students must organize their dissertation committees by their penultimate semester before graduation.
   (Transitional provision) Graduate students who entered the school prior to 2018 academic year are governed by the Department Regulations of the corresponding academic year.

*Applicable from freshmen in 2021

Comprehensive Exams

The purpose of comprehensive exams is to evaluate specialized knowledge in the student's area of concentration.

1. To earn a M.Eng. degree, students must pass three courses from the major courses.
2. To earn a Ph.D. degree, students much pass three courses from the major courses.
3. The minimum passing score for each course is 70 out of 100.
4. Students who have acquired at least 18 course credits in a master's degree program, 27 course credits in a doctoral degree program or 45 course credits in an integrated master-

doctoral degree program, and received a GPA of at least 3.0 shall be eligible to take the comprehensive exam.

Degree Requirements

1. By the completion of the M.Eng. program, a master’ s student much have at least 1 research paper published or accepted for publication in a domestic conference or or submitted to a journal listed in the Science Citation Index or the Science Citation Index Expanded, with him or her as the first or the corresponding author and his or her academic advisor as the corresponding author.
2. By the completion of the Ph.D. program, a doctoral student much have at least 1 research paper published or accepted for publication in journals listed in the Science Citation Index or in the Science Citation Index Expanded, with him or her as the first or the corresponding author.
3. Fast track Ph. D. students must mett the same requirements as the other Ph. D. students.

■ Courses ■

		Code	Title	Credits (hour)
Major Courses	-	IME 501	Applied Statistics Methods	3(3)
		IME 502	Analysis and modeling of systems	3(3)
		IME 503	Optimization Theory and Applications	3(3)
		IME 504	Smart Manufacturing	3(3)
		IME 505	Computer Algorithm	3(3)
		IME 506	Manufacturing Information System	3(3)
		IME 508	Applied Stochastic Processes	3(3)
		IME 509	Programming for Data Science	3(3)
		IME 511	Ergonomics	3(3)
		IME 512	Product Development	3(3)
		IME 513	Introduction to Manufacturing Systems	3(3)
		IME 518	Strategic Management of Technology	3(3)
		IME 520	Logistics Innovations	3(3)
		IME 531	Transportation and Logistics Management	3(3)
		IME 533	Semiconductor Industry and Industrial AI	3(3)
		IME 552	Network Optimization	3(3)
		IME 553	Advanced Topics in Linear Programming	3(3)
		IME 554	Forecasting Models	3(3)
		IME 556	Natural Language Processing	3(3)
		IME 557	Supply Chain Modeling	3(3)
		IME 564	Meta-heuristic	3(3)
		IME 565	Machine Learning	3(3)
		IME 567	Multivariate Statistical Analysis for Data Mining	3(3)
		IME 569	Service Engineering Systems	3(3)
		IME 572	Systems Engineering	3(3)
		IME 583	Intellectual Property Management	3(3)
		IME 610	Production System Design	3(3)
		IME 613	System Simulations	3(3)
		IME 614	Scheduling Theory	3(3)
		IME 617	Integer Programming	3(3)
		IME 619	Product Development Experimental Methodology	3(3)
		IME 620	Stochastic Dynamic Programming	3(3)
		IME 623	Biomechanics and Work Physiology	3(3)
		IME 624	Human Interaction	3(3)
		IME 626	Safety Systems Engineering	3(3)
		IME 630	Decision Making Analysis	3(3)
		IME 631	User-centered Design	3(3)
		IME 633	Introduction to Nonlinear Programming	3(3)

		IME 634	Facility Layout Planning	3(3)
		IME 645	Advanced Logistics Management	3(3)
		IME 647	Logistics Facilities Design	3(3)
		IME 649	Advanced Topics in Financial Engineering	3(3)
		IME 651	Supply Chain Economics	3(3)
		IME 652	Nonparametric Data Analysis	3(3)
		IME 653	Unstructured Data Analysis	3(3)
		IME 654	Business Analytics	3(3)
		IME 655	Big Data Analysis	3(3)
		IME 657	Workflow Modeling	3(3)
		IME 658	Theory and Application of Deep Learning	3(3)
		IME 659	Probabilistic Graphical Model and Network Data	3(3)
		IME 661	Vision and Image Analysis	3(3)
		IME 662	Reinforcement Learning	3(3)
		IME 668	Understanding of Manufacturing Industry Based on Artificial Intelligence	3(3)
		IME 663	Customer-oriented Marketing	3(3)
		IME 664	Cognitive Engineering	3(3)
		IME 711	Advanced Topics in Quality Control	3(3)
		IME 716	Informatics	3(3)
		IME 722	Cyber-Physical Production System	3(3)
		IME 724	Introduction to Data Science	3(3)
		IME 726	Cognitive Modeling	3(3)
		IME 805	Seminar in Industrial Engineering 1	3(3)
		IME 806	Seminar in Industrial Engineering 2	3(3)
		IME 807	Advanced Topics in Industrial Engineering 1	3(3)
		IME 808	Advanced Topics in Industrial Engineering 2	3(3)
		IME 809	Seminar in Industry Trend 1	3(3)
		IME 810	Seminar in Industry Trend 2	3(3)
		IME 821	Seminar in Management Engineering 1	3(3)
		IME 822	Seminar in Management Engineering 2	3(3)
		IME 823	Advanced Topics in Management Engineering 1	3(3)
		IME 824	Advanced Topics in Management Engineering 2	3(3)
		IME 831	Seminar in Systems Engineering 1	3(3)
		IME 832	Seminar in Systems Engineering 2	3(3)
		IME 841	Seminar in Entrepreneurship	3(3)
		IME 843	Seminar in Industrial AI 1	3(3)
		IME 844	Seminar in Industrial AI 2	3(3)