

Curriculum(Undergraduate Course)

Classification	Subject Code	Subject Name	Lecture:Lab.: Credit (Homework)	Semester	Remark
Elective Basic Course	31.101	Introduction to Operations Research	3:1:3(4)	Spring and Fall	
Mandatory Major Courses	31.221	Production Management I	3:0:3(6)	Fall	
	31.232	Operations Research: Stochastic Models	3:1:3(4)	Fall	
	31.241	Engineering Statistics I	3:0:3(6)	Spring	
	31.242	Engineering Statistics II	3:0:3(6)	Fall	
	31.251	Manufacturing Process Innovation	3:1:3(4)	Spring	
	31.260	Data Structure and Analysis	3:1:3(6)	Spring	
	31.261	Information Technology for Industrial Engineering	3:1:3(6)	Fall	
	31.331	Operations Research: Optimization	3:1:3(3)	Spring	
Elective Courses	31.310	Work Study	2:3:3(5)	Fall	
	31.312	Introduction to Human Engineering	2:3:3(2)	Spring	
	31.322	Production Management II	3:0:3(6)	Spring	
	31.342	Regression Analysis and Experimental Designs	3:0:3(4)	Fall	
	31.343	Statistical Machine Learning	3:1:3(5)	Spring	
	31.353	Product Development and Product Information Management	3:1:3(6)	Spring	
	31.361	Human-Computer Interaction Design	3:1:3(4)	Spring	
	31.363	Introduction to Modeling and Simulation	3:1:3(5)	Fall	
	31.371	Service Systems Engineering	3:1:3	Spring	
	31.413	Aesthetic Engineering	2:3:3(3)	Fall	
	31.414	Cognitive Science and Systems	3:1:3(4)	Fall	
	31.416	Techniques and Methods in Human Engineering	3:1:3	Fall	◎
	31.421	Engineering Economy and Cost Analysis	3:0:3(6)	Spring	
	31.423	Logistics Management	3:1:3(5)	Fall	
	31.425	Project Management	3:1:3(4)	Spring	◎
	31.426	Supply Chain Management	3:1:3(5)	Spring	◎
	31.431	Introduction to Optimization Theory	3:0:3(3)	Spring	◎
	31.432	Decision Analysis and Risk Management	3:0:3(4)	Spring	◎
	31.434	Introduction to Telecommunication Service and Systems	3:1:3(3)	Spring	◎
	31.435	Telecommunication Service and Policy	3:0:3(6)	Fall	◎
31.436	Case Studies for Industrial & Systems Engineering	3:1:3(4)	Fall		
31.437	Data-Driven Decision Making	3:1:3	Spring	◎	

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		and Control			
	31.441	Quality Control	3:0:3(6)	Spring	
	31.451	IT Service Engineering	3:1:3(6)	Spring	◎
	31.452	System Design Project	2:3:3(5)	Spring	
	31.453	Conceptual Design for Engineering Products	3:0:3	Spring	◎
	31.461	Business Process Engineering and Management	3:0:3(6)	Fall	◎
	31.463	Information Systems Engineering and Management	3:0:3	Spring	◎
	31.471	Introduction to Financial Engineering	3:0:3		◎
	31.472	Socio-Economic Systems Modeling)	3:0:3	Spring	◎
	31.473	Financial Economics	3:0:3	Fall	◎
	31.481	Special Topics in Industrial Engineering I	3:0:3		
	31.482	Special (Invited) Lecture I	1:0:1		
	31.483	Special (Invited) Lecture II	2:0:2		
Research	31.490	B.S. Thesis	0:6:3		
	31.495	Individual Study	0:6:1		
	31.496	Seminar in B.S.	1:0:1	Spring	

◎: Course mutually recognized by undergraduate and graduate programs

Curriculum(Graduate Course)

Classification	Subject No.	Subject Code	Subject Name	Lecture:Lab.: Credit (Homework)	Semester	Remark
Elective Courses	IE511	31.511	Human Centered Systems Design	2:3:3(2)	Spring	◎
	IE522	31.522	Advanced Topics in Engineering Economy & Cost Analysis	3:0:3(6)	Spring	◎
	IE523	31.523	Production System Design	3:1:3(5)	Spring	◎
	IE524	31.524	Optimal Location of Facilities	2:3:3(5)	Fall	◎
	IE531	31.531	Linear Programming	3:1:3(6)	Spring	◎
	IE532	31.532	Simulation and System Modeling	3:1:3(6)	Spring	◎
	IE533	31.533	Systems Engineering	3:0:3(4)		◎
	IE535	31.535	Network Theory and Applications	3:1:3(4)	Spring	◎
	IE536	31.536	Scheduling Theory and Applications	3:0:3(4)	Fall	◎
	IE537	31.537	Business Telecommunication Systems	3:1:3(3)	Fall	◎
	IE538	31.538	Genetic Algorithms and Applications	3:1:3(3)	Fall	◎
	IE539	31.539	Convex Optimization	3:1:3(6)	Fall	◎
	IE540	31.540	Dynamic Programming and Reinforcement Learning	3:1:3	Fall	◎
	IE541	31.541	Advanced Engineering Statistics	3:0:3(8)	Spring	◎
	IE542	31.542	Regression Analysis: Theory and Practice	3:0:3(6)	Spring	◎
	IE551	31.551	Manufacturing System and Supply Chain	3:1:3(6)	Spring	◎
	IE552	31.552	CAD/CAM and Geometric Modeling	3:1:3(6)	Spring	◎
	IE553	31.553	Product Lifecycle Management	3:1:3(6)	Spring	◎
	IE554	31.554	Knowledge-Based Design System	3:1:3	Spring	◎
	IE561	31.561	Advanced Information System Engineering	3:0:3	Fall	◎
	IE565	31.565	Information Security Policy and Management	3:0:3	Fall	◎
	IE566	31.566	Human-Computer Interaction: Theory and Design	3:0:3		◎
	IE570	31.570	Military Operations Research Theory and Applications	3:1:3(4)	Spring	
	IE571	31.571	War Game Modeling	3:1:3(4)	Fall	◎
	IE572	31.572	Analysis of Weapon Systems	3:1:3	Fall	◎
	IE573	31.573	Healthcare Service Delivery Systems	3:1:3	Spring	◎
	IE574	31.574	Portfolio management and Financial Optimization	3:0:3	Fall	◎
	IE575	31.575	Structuring and Pricing of Financial Products	3:1:3	Spring	◎
	IE576	31.576	Risk Management	3:0:3	Fall	◎
IE577	31.577	Fundamentals of Systems Engineering	3:1:3	Fall	◎	
IE578	31.578	Research in Financial Economics	3:0:3	Spring	◎	
IE579	31.579	Game Theory and Multi-Agent Reinforcement Learning	3:1:3	Fall	◎	

Classification	Subject No.	Subject Code	Subject Name	Lecture:Lab.: Credit (Homework)	Semester	Remark
	IE624	31.624	Analysis of Inventory Management Systems	3:1:3(6)		
	IE631	31.631	Integer Programming	3:1:3(6)	Fall	
	IE632	31.632	Stochastic Modeling I	3:1:3(5)	Fall	
	IE633	31.633	Queueing Theory	3:0:3(6)	Spring	
	IE635	31.635	Combinatorial Optimization	3:0:3(4)	Fall	
	IE636	31.636	Intelligent Systems & Soft Computing	3:0:3(3)	Fall	
	IE638	31.638	Wireless and Cellular Communication Systems	3:1:3(3)	Spring	
	IE639	31.639	Supply Chain Optimization	3:0:3(4)	Fall	
	IE642	31.642	Forecasting and Time Series Analysis	3:1:3(6)		
	IE643	31.643	Design and Analysis of Experiments	3:1:3(4)	Fall	
	IE644	31.644	Life Testing and Survival Analysis	3:0:3(4)	Spring	
	IE645	31.645	Quality Engineering	3:0:3(6)	Spring	
	IE646	31.646	Data Mining	3:1:3(4)	Spring	
	IE661	31.661	Applications of AI/DM Technology	3:0:3	Fall	
	IE671	31.671	Stochastic Modeling II	3:0:3	Fall	
	IE722	31.722	Material Storage & Handling Systems	3:0:3(5)	Fall	
	IE761	31.761	Cognitive Engineering	3:0:3(6)		
	IE801	31.801	Special Topics in Industrial Engineering II	3:0:3		
	IE802	31.802	Invited Lecture I	1:0:1		
	IE803	31.803	Invited Lecture II	2:0:2		
Research	IE960	31.960	Thesis (Master's Course)			
	IE965	31.965	Individual Study (MS)	1:0:1		
	IE966	31.966	Seminar in MS	1:0:1		
	IE980	31.980	Thesis (Doctoral Course)			
	IE985	31.985	Individual Study (Ph.D.)	1:0:1		
	IE986	31.986	Seminar in Ph.D	1:0:1		

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Substitutable Course List

Substitutable subjects in Department of Industrial & Systems Engineering					
Classification	opened course		unopened course		
	Subject No.	Subject Name	Subject No.	Subject Name	Remark
Mandatory Major Courses	IE260	Data Structure and Analysis	IE362	Programming & practices for Industrial Information System	subject name was changed
				Applied Data Structures and Algorithms	
Elective Courses	IE343	Statistical Machine Learning	IE442	Statistical Data Analysis	subject name was changed
Elective Courses	IE541	Advanced Engineering Statistics	IE641	Mathematical Statistics	subject name was changed

Substitutable subjects from other departments					
Classification	IE courses		courses from other departments		
	Subject No.	Subject Name	Subject No.	Subject Name	Remark
Mandatory Major Courses	IE362	Applied Data Structures and Algorithms(unopened)	CS206	Data Structure	one-way substitution
Mandatory Major Courses	IE260	Data Structure and Analysis			
Elective Courses	IE231	Applied Real Analysis and Probability	FEP321	Analysis and Probability for Finance	Two-way substitution
Elective Courses	IE421	Engineering Economy and Cost Analysis	CC513	Engineering Economy and Cost Analysis	one-way substitution
Elective Courses	IE471	Introduction to Financial Engineering	FEP311	Introduction to Financial Engineering	Two-way substitution
Elective Courses	IE565	Information Security Policy and Management	IS532	Information Security policy and management	Two-way substitution
Elective Courses	IE566	Human-Computer Interaction: Theory and Design	KSE531	Human-Computer Interaction: Theory and Design	Two-way substitution
Elective Courses	IE577	Fundamentals of Systems Engineering	AE500	Synthetic Design of Aerospace Systems	one-way substitution
Elective Courses	IE636	Intelligent Systems & Soft Computing	KSE622	Soft-computing in Intelligent System Design	Two-way substitution
Elective Courses	IE646	Data Mining	KSE525	Data Mining and Knowledge Discovery	Two-way substitution
Elective Courses	IE761	Cognitive Engineering	KSE641	Cognitive Engineering	Two-way substitution