Curriculum(Undergraduate Course)

Classification	Subject No.	Subject Code	Subject Name	Lecture:Lab.: Credit (Homework)	Semester	Remark
Elective Basic Course	IE101	31.101	Introduction to Operations Research	3:1:3(4)	Spring and Fall	
Mandatory Major Courses	IE241	31.241	Engineering Statistics II	3:0:3(6)	Spring	
	IE251	31.251	Manufacturing Process Innovation	3:1:3(4)	Spring	
	IE260	31.260	Data Structure and Analysis	3:1:3(6)	Spring	
	IE261	31.261	Information Technology for Industrial Engineering	3:1:3(6)	Fall	
	IE321	31.321	Production Management I	3:0:3(6)	Fall	
	IE331	31.331	Operations Research I	3:1:3(3)	Spring	
	IE332	31.332	Operations Research II	3:1:3(4)	Fall	
	IE341	31.341	Engineering Statistics II	3:0:3(6)	Fall	
Elective Courses	IE231	31.231	Applied Real Analysis and Probability	3:0:3	Spring	
	IE310	31.310	Work Study	2:3:3(5)	Fall	
	IE312	31.312	Introduction to Human Engineering	2:3:3(2)	Spring	
	IE322	31.322	Production Management II	3:0:3(6)	Spring	
	IE342	31.342	Regression Analysis and Experimental Designs	3:0:3(4)	Fall	
	IE343	31.343	Statistical Machine Learning	3:1:3(5)	Spring	
	IE353	31.353	Product Development and Product Information Management	3:1:3(6)	Spring	
	IE361	31.361	Human-Computer Interaction Design	3:1:3(4)	Spring	
	IE363	31.363	Introduction to Modeling and Simulation	3:1:3(5)	Fall	
	IE371	31.371	Service Systems Engineering	3:1:3	Spring	
	IE413	31.413	Aesthetic Engineering	2:3:3(3)	Fall	
	IE414	31.414	Cognitive Science and Systems	3:1:3(4)	Fall	
	IE421	31.421	Engineering Economy and Cost Analysis	3:0:3(6)	Spring	
	IE423	31.423	Logistics Management	3:1:3(5)	Fall	
	IE425	31.425	Project Management	3:1:3(4)	Spring	◎
	IE426	31.426	Supply Chain Management	3:1:3(5)	Spring	◎
	IE431	31.431	Introduction to Optimization Theory	3:0:3(3)	Spring	◎
	IE432	31.432	Decision Analysis and Risk Management	3:0:3(4)	Spring	◎
	IE434	31.434	Introduction to Telecommunication Service and Systems	3:1:3(3)	Spring	◎
	IE435	31.435	Telecommunication Service and Policy	3:0:3(6)	Fall	◎
	IE436	31.436	Case Studies for Industrial & Systems Engineering	3:1:3(4)	Fall	
	IE441	31.441	Quality Control	3:0:3(6)	Spring	
	IE451	31.451	IT Service Engineering	3:1:3(6)	Spring	◎

Classification	Subject No.	Subject Code	Subject Name	Lecture:Lab.: Credit (Homework)	Semester	Remark
	IE452	31.452	System Design Project	2:3:3(5)	Spring	
	IE453	31.453	Conceptual Design for Engineering Products	3:0:3	Spring	◎
	IE461	31.461	Business Process Engineering and Management	3:0:3(6)	Fall	◎
	IE463	31.463	Information Systems Engineering and Management	3:0:3	Spring	◎
	IE471	31.471	Introduction to Financial Engineering	3:0:3		◎
	IE472	31.472	Socio-Economic Systems Modeling)	3:0:3	Spring	◎
	IE473	31.473	Financial Economics	3:0:3	Fall	◎
	IE481	31.481	Special Topics in Industrial Engineering I	3:0:3		
	IE482	31.482	Special (Invited) Lecture I	1:0:1		
	IE483	31.483	Special (Invited) Lecture II	2:0:2		
Research	IE490	31.490	B.S. Thesis	0:6:3		
	IE495	31.495	Individual Study	0:6:1		
	IE496	31.496	Seminar in B.S.	1:0:1	Spring	

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	◎
	IE624	31.624	Analysis of Inventory Management Systems	3:1:3(6)		

Classification	Subject No.	Subject Code	Subject Name	Lecture:Lab.: Credit (Homework)	Semester	Remark
	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		

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