

Bachelor of Science Engineering Curriculum: Service Systems

Year 1	MA1160	Calculus I	4	ENG1102	Engineering Modeling & Design	3
	PH1100	Intro. Physics Lab I	1	MA2160	Calculus II	4
	CH1100	General Chemistry	4	PH2100	University Physics I	3
	ENG1101	Eng. Analysis & Problem Solving	1	PSY2000	PSYCH.	3
	UN1001	Perspectives on Inquiry	3	UN1002	World Cultures	4
	Co-curricular Unit (ie. Phys. Ed.)		(.5)	Co-curricular Unit (ie. Phys. Ed.)		(.5)
	<i>Total Credits</i>			15	<i>Total Credits</i>	
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Year 2	MA2321	Linear Algebra	2	ENG 2120	Statics-Strength of Materials	4
	SSE2100	World Service Systems Engin.	3	MA3710	Statistics	3
	MA3521	Elem. Differential Equations	2	UN2002	Institutions	3
	CS1121	Introduction to Comp. Science	3	SSE2300	Service Systems Dyn. & Design	3
	ENG3200	Thermo/Fluid Mechanics	4	Math/Science Elective		(3-4)
	UN2001	Revisions I	3	Co-curricular Unit (ie. Phys. Ed.)		(.5)
	Co-curricular Unit (ie. Phys. Ed.)		(.5)	<i>Total Credits</i>		
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Year 3	SSE3400	Human Influences Service Systems	3	BA3400	Principles of Finance	3
	SSE3500	Operations Service Systems	3	SSE3200	Web-Based Services	3
	BA2330	Accounting I	3	SSE3600	Opt. & Adap. Dec. Making	3
	BA3200	IS/IT Management	3	EE3010	Circuits and Instrumentation	3
	Math/Science Elective		3/4	General Education Distribution Course		3
				Service Systems Minor Elective		3
	Co-curricular Unit (ie. Phys. Ed.)		(.5)	Co-curricular Unit (ie. Phys. Ed.)		(.5)
<i>Total Credits</i>			15/16	<i>Total Credits</i>		
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Year 4	SSE4300	Eng. Project Plan & Management	3	ENG4900	Senior Design	3
	MEEM4650	Quality Engineering	3	Service Systems Minor Elective		3
	EC3400	Econ. Dec. Analysis	3	SSE4600	Managing Risk	3
	MET4400	Simulation	3	General Education Distribution Course		3
	General Education Distribution Course		3	General Education Distribution Course		3
	<i>Total Credits</i>			15	<i>Total Credits</i>	

Total credits required to complete BS degree in Engineering with Service Sector 128

SSE Course Descriptions

SSE2100 The World of Service Systems Engineering (F)

Introductory course covers the evolution of service systems engineering within the broader context of the engineering disciplines. Careers and professional practice within the discipline will be explored. Topics such as optimization, simulation, and quality tools will be introduced. Case studies in service systems engineering will be featured throughout.

SSE2300 Service System Dynamics and Design (F,S)

Introduces a systems perspective in solving complex problems. How systems are designed and implemented will be a focal point of the course. Topics such as simulation, life cycle, and regulation will be introduced.

SSE3200 Analysis and Design of Web-based Services (S)

The strategy behind developing web-based service systems will be the focus of the course. Topics will include flowcharting, cost estimating, performance measurement, and alpha and beta testing. A semester project will illustrate the use of these tools. Prerequisites: CS1121(C) and SSE2300

SSE3400 Human Influences in Service Systems (F)

Understanding the social, cognitive, and cultural influences on individual and group behavior is the focus of the course. Methods for assessment of human perception, such as surveys, focus groups, and structured interviews, will be introduced. The design of the service interface for human interaction will also be explored. Prerequisites: SSE2300(C) and PSY2000

SSE3500 Operation of Service Systems (F)

Focuses on the operation of service systems in a customer-focused environment. Topics will include work task breakdown, performance measurement, and process evaluation and improvement. Supply chain, demand management and lean practices will also be introduced. Prerequisites: MA3710

SSE3600 Optimization and Adaptive Decision Making (S)

Techniques in optimization and adaptive decision making will be introduced. The fundamentals in linear, integer, and goal programming will be applied to real-world problems with a service systems focus. Adaptive decision making techniques including Bayesian analysis, fuzzy systems, and neural networks will also be investigated. Prerequisites: MA2320

SSE4300 Engineering Project Planning and Management (F)

The various stages in a project life cycle will be defined and explored such as planning, metrics, execution, completion, and maintenance. Basic tools such as CPM, PERT, Gantt, and budgeting will be introduced. Change assimilation in the context of project management will also be discussed. Prerequisites: MA3710

SSE4600 Managing Risk (S)

Risk definition and identification in terms of financial, human, legal, and physical constraints will be introduced. Techniques for analyzing and managing risk such as FMEA and Reliability studies will be covered. Other topics will include risk elimination, mitigation, and tolerance. Prerequisites: MA3710