SOFTWARE ENGINEERING ELECTIVES

NOTE: For prerequisites, please check the current Course Catalog - https://catalog.iastate.edu/azcourses/

COURSE #	TITLE	CREDITS
SE 3290 x: CPRE	Software Project Management	3
SE 3420 x: COMS	Principles of Programming Languages	3
SE 3620 x: COMS	Object-Oriented Analysis and Design	3
SE 4090 x: COMS	Software Requirements Engineering	3
SE 4120 x: COMS/CPRE	Formal Methods in Software Engineering	3
SE 4130 x: COMS	Foundations and Applications of Program Analysis	3
SE 4160 x: CPRE	Software Evolution and Maintenance	3
SE 4170 x: COMS	Software Testing	3
SE 4190 x: CPRE	Software Tools for Large Scale Data Analysis	4
SE 4220	Cloud Computing - Software Development	3
SE 4230X	Software Refactoring	3
SE 4390X	Applied Software Design: Theory and Practice	3
SE 4400 x: COMS	Principles and Practice of Compiling	3
COMS 4100/5100	Distributed Development of Software	3
COMS 4150/5150	Software System Safety	3
COMS 4410/5410	Programming Languages	3
CPRE 4140	Introduction to Software Systems for Big Data Analytics	4

SUPPLEMENTAL ELECTIVES

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Any SE Elective can be used to fill this requirement.

COURSE #	TITLE	CREDITS
ARTIS 4700X/5700X	Data, Code, and Form	3
CE 3880 x: ABE/EE	Sustainable Engineering and International Development	3
COMS 2520	Linux Operating System Essentials	3
COMS 3270	Advanced Programming Techniques	3
COMS 3310 x: LING	Theory of Computing	3
COMS 3360	Introduction to Computer Graphics	3
COMS 4020 A	Computer Science Senior Project: Multimedia and Computer Gaming I	2-3
COMS 4020 B	Computer Science Senior Project: Multimedia and Computer Gaming II	2-3
COMS 4180/5180	Introduction to Computational Geometry	3
COMS 4190X/5190X	Trustworthy Healthcare Software	3
COMS 4210 x: MATH	Logic for Mathematics and Computer Science	3
COMS 4240 x: CPRE/MATH	Introduction to High Performance Computing	3
COMS 4250 x: CPRE	High Performance Computing for Scientific and Engineering Applications	3
COMS 4260 x: CPRE	Introduction to Parallel Algorithms and Programming	4
COMS 4300	Concurrent Programming in Practice	3
COMS 4330/5330	Molecular Programming of Nanoscale Devices and Processes	3
COMS 4340	Quantum Information and Complexity	3
COMS 4350/5350	Algorithms for Large Data Sets: Theory and Practice	3
COMS 4370	Computer Game and Media Programming	3
COMS 4440 x: BCB/BCBIO/ BIOL/CPRE/ GEN	Bioinformatic Analysis	4
COMS 4540/5540 x: CPRE	Distributed Systems	3
COMS 4550/5550	Simulation: Algorithms and Implementation	3
COMS 4590X/5590 x: CPRE 4590X	Security and Privacy in Cloud Computing	3
COMS 4610/5610	Principles and Internals of Database Systems	3
COMS 4630X/5630X	Healthcare Data Privacy, Security and Confidentiality: Principles and Algorithms	3
COMS 4640X/5640X	AI for Healthcare	3
COMS 4720/5720	Principles of Artificial Intelligence	3
COMS 4740/5740	Introduction to Machine Learning	3
COMS 4760/5760	Motion Strategy Algorithms and Applications	3
COMS 4770/5770	Problem Solving Techniques for Applied Computer Science	3
COMS 4810 x: MATH	Numerical Methods for Differential Equations	3

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Any SE Elective can be used to fill this requirement.

COURSE #	TITLE	CREDITS
COMS 4860	Fundamental Concepts in Computer Networking	3
COMS 4870/5870	Network Programming, Applications and Research Issues	3
COMS 4900	Independent Study	1-2 NOTE: Can only apply 2 credits to supplemental electives
COMS 5750 x: CPRE, HCI	Computational Perception	3
CONE 3800	Engineering Law	3
CPRE 2880	Embedded Systems I: Introduction	4
CPR E 3880	Embedded Systems II: Mobile Platforms	4
CPRE 4180 x: EE	High Speed Systems Engineering Measurement and Testing	4
CPRE 4260/5260 x: COMS	Introduction to Parallel Algorithms and Programming	4
CPRE 4300/530 x: CYB	Network Protocols and Security	3
CPRE 4310	Basics of Information System Security	3
CPRE 4360X x: CYBE	Digital Forensics	3
CPRE 4500/5500	Distributed Systems and Middleware	3
CPRE 4580/5580	Real Time Systems	3
CPRE 4830	Hardware Software Integration	4
CPRE 4870	Hardware Design for Machine Learning	4
CPRE 4880	Embedded Systems Design	4
CPRE 4890	Computer Networking and Data Communications	4
CPRE 4900	Independent Study	1-2 NOTE: Can only apply 2 credits to supplemental electives
CYBE 4400 x: CPRE	Operating System Security	3
EE 4280X	Image Analysis Using Machine Learning	3
EE 4890	Survey of Remote Sensing Technologies	3
EE 4890L	Satellite Remote Sensing Laboratory	1
EE 5010	Analog and Mixed-Signal VLSI Circuit Design Techniques	4
EE 5050	CMOS and BiCMOS Data Conversion Circuits	4

EE 5060	Design of CMOS Phase-Locked Loops	4
EE 5070	VLSI Communication Circuits	4
ENGR 3200	International Experience Report	3
IE 4200	Engineering Problem Solving with R	3
IE 4700	Systems Engineering and Project Management	3
IE 4720	Design and Evaluation of Human-Computer Interaction	3
ME 4840/5840 x: WLC	Technology, Globalization, and Culture	3
STAT 4279/5279	Statistical Computing for Data Analysis	3
SE 4900	Independent Study	1-2 NOTE: Can only apply 2 credits to supplemental electives
STAT 4830/5830	Empirical Methods of Computational Sciences	3
STAT 4840/5840	Computer Processing of Scientific Data	3
STAT 4860/5860	Introduction to Statistical Computing	3