

Technical Electives – Computer Science Major

The Computer Science program requires a total of 15 credits of technical electives, chosen as follows.

All non-required CompSci courses number 400-699 are either Computer Science or Applied Technology Electives.

The Applied Technology Electives are in range 480-489. All other non-required CompSci courses in the 400-699 range are Computer Science Electives. A minimum of 9 credits must come from the Computer Science Electives.

Computer Science Electives (Select 9 to 15 credits from this list)		Credits	Prerequisite
CompSci 422	Introduction to Artificial Intelligence	3	Jr St, CompSci 317*, 351*
CompSci 423	Introduction to Natural Language Processing	3	Jr St, CompSci 351*
CompSci 425	Introduction to Data Mining	3	Jr St, CompSci 251, Math 221 or 232
CompSci 438	Software Engineering Laboratory	(1 – 6)	Jr St, CompSci 251*
CompSci 444	Intro to Text Retrieval & Its Applications in Biomedicine	3	Jr St, CompSci 351 or HCA 442
CompSci 459	Fundamentals of Computer Graphics	3	Jr St, CompSci 251, Math 232
CompSci 469	Introduction to Computer Security	3	Jr St, CompSci 251*, 317*
CompSci 511	Symbolic Logic	3	Jr St, Phil 212 or 6cr 300 math
CompSci 530	Computer Networks Laboratory	3	Jr St, CompSci 520
CompSci 536	Software Engineering	3	Jr St, CompSci 251*
CompSci 552	Advanced Object Oriented Programming	3	Jr St, CompSci 351*, 361*
CompSci 557	Introduction to Database Systems	3	Jr St, CompSci 251, 315
CompSci 581	Web Languages & Standards	3	Jr St, CompSci 417, 431
CompSci 599	Senior Thesis	3	Sr St, Cons Instr
CompSci 654	Introduction to Compilers	3	Jr St, CompSci 431, 655(C)
CompSci 655	Compiler Implementation Laboratory	3	Jr St, CompSci 431, 654(C) or 754(C)
CompSci 657	Topics in Computer Science	(1 – 4)	Variable
CompSci 699	Independent Study	(1 – 3)	Variable
ElecEng 367	Introduction to Microprocessors	4	CompSci 240 or 250, ElecEng 354*
ElecEng 451	Introduction to VLSI Design	3	Jr St, ElecEng 330, 354
ElecEng 457	Digital Logic Laboratory	3	Jr St, ElecEng 330, 354
Applied Technology Electives (Select 0 to 6 credits from this list)			
CompSci 481	Server-Side Internet Programming	3	CompSci 113(C), InfoSt 240(C), or Art 324(C)
CompSci 482	Rich Internet Applications	3	CompSci 361 or 481
CompSci 658	Topics in Applied Computing	3	Variable
Supplemental Electives (Select 0 to 6 credits from this list)			
Bus Adm 490	Entrepreneur Internship	3	Jr St, Bus Adm 295 or 497
EAS 001	Engineering Co-Op Work Period	(1 – 3)	Prior Cons Co-Op Dir
EAS 497	Study Abroad	(1 – 3)	Acceptance to Study Abroad Program
English 206	Technical Writing	3	GER English

Applied Mathematics Electives (Select 9 credits from this list)

May not include both Math 234 and ElecEng 234

Math 205	Introductory Finite Mathematics	3	Math Placement 30+; Math 105*, 108*, or 116*
Math 232	Calculus & Analytic Geometry II	4	Math 231*
Math 233	Calculus & Analytic Geometry III	4	Math 232*
Math 234	Linear Algebra & Differential Equations	4	Math 232*
Math 240	Matrices & Applications	3	Math Placement 40 or 200-level*
Math 305	Introduction to Mathematical and Computational Math	3	Math 211* and one addl 200-level math; or 231*
Math 313	Linear Programming and Optimization	3	Math/ElecEng 234* or 240*
Math 315	Mathematical Programming and Optimization	3	234* or 240*; and Math 211* or 233*
Math 320	Introduction to Differential Equations	3	Math 232*, 240*; or 234*
Math 341	Introduction to Language and Practice of Mathematics	3	Math 115* or 116*&117* or 211*&117* or Math Plmt 40, or Math Plmt 36 & 116*/211* or Mth Plmt 35 & 117*
Math 405	Mathematical Models and Applications	3	Math 211* or 231* and Math/ElecEng 234* or 240*
Math 431	Modern Algebra with Applications	3	Jr St, Math 232
Math 451	Axiomatic Geometry	3	Jr St, Math 232(C), 341
MthStat 361	Introduction to Mathematical Statistics I	3	Jr St, Math 233
MthStat 469	Biostatistics	3	Jr St, elementary stats course
MthStat 563	Regression Analysis	3	MthStat 467 or 362
ElecEng 234	Analytical Methods in Engineering	4	Math 232*
Ind Eng 367	Intro Statistics for Physical Sciences & Engineering	3	B- or better Math 211 or 213; C or better Math 221 or 231

May include only one of Math 240, Math 234, ElecEng 234

May include only one of Math 320, Math 234, ElecEng 234

Free Elective Courses (Variable credits)

University level courses of your choice as needed to reach a minimum of 120 total credits.

*C or better in prerequisite

(C) Concurrent Enrollment in Designated Course

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