**OPTIONS FOR SOFTWARE ENGINEERING MAJOR GUIDED ELECTIVES**

**(2018-2019)**

*SE students following the 2004 and later catalogs must complete ONE APPLICATION DOMAIN which consists of 3 courses as specified per group. Please see the Application Domain Information sheet for course groupings. The following courses are choices for the remaining SE Guided Elective.*

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| **Guided Elective Option** | **Pre-Requisite Course** |
| CS 4301  Special Topics in Computer Science | CE/CS/SE/TE 3345 |
| CS 4314  Intelligent Systems Analysis | CGS 4313 or consent of Instructor |
| CS 4315  Intelligent Systems Design | CGS 4313 or consent of Instructor |
| CS 4332  Introduction to Programming Video Games | CE/CS/SE/TE 3345 |
| CS 4334  Numerical Analysis | (Math 2370 or CE/CS 1337) and Math 2418, Math 2451 |
| CS 4336  Advanced JAVA | CE/CS 2336 or Equivalent |
| CS 4337  Organization of Programming Languages | CE/CS 2336 with a C or better, CE/CS 2305 with a C or better, and CS/SE 3340 |
| CS 4341 and CS 4141  Digital Logic and Computer Design and Lab | CE/EE 2310 or CS/SE 3340, PHYS 2326 |
| CS 4349  Advanced Algorithm Design and Analysis | CS 3305 with a C or better, CE/CS 3345 |
| CS 4352  Human Computer Interactions I | None |
| CS 4353  Human Computer Interactions II | None |
| CS 4361  Computer Graphics | Math 2418, CE/CS 2336,  and CE/CS/SE/TE 3345 or Equivalent |
| CS 4365  Artificial Intelligence | CE/CS/SE/TE 3345 or Equivalent |
| CS 4375  Introduction to Machine Learning | CS/SE 3341 and CE/CS/SE/TE 3345 or Equivalent |
| CS/SE 4376  Object Oriented Programming Systems | CE/CS 2336 with a C or better or Equivalent |
| CS 4384  Automata Theory | CS 3305 with a C or better |
| CS 4386  Compiler Design | CE/CS/SE/TE 3345 or Equivalent |
| CS 4389  Data & Applications Security | CS/SE 4347 |
| CS 4390  Computer Networks | CE/CS/SE/TE 3345 or Equivalent |
| CS 4391  Intro to Computer Vision | CE/CS/SE/TE 3345 or Equivalent |
| CS 4392  Computer Animation | Math 2418 and CE/CS/SE/TE 3345 or Equivalent |
| CS 4393  Computer and Network Security | CE/CS/SE/TE 4348 or Equivalent |
| CS 4394  Implementation of Modern Operating Systems | CE/CS/SE/TE 4348 and CS 3335 or  Equivalent Programming experience |
| CS 4395  Human Language Technologies | CS/SE 3341 and CE/CS/SE/TE 3345 or Equivalent |
| CS 4396  Networking Laboratory | CS 4390 or Equivalent |
| CS 4397  Embedded Computer Systems | CE/CS/SE/TE 4348 or Equivalent |
| CS 4398  Digital Forensics | CE/CS/SE/TE 4348 and CE/CS/TE 4390 or Equivalent |
| CS 4V95  Undergraduate Topics in Computer Science | Varies by course topic |
| EE 4325  Introduction to VLSI Design | CS 4341 |

Students may also use SE 4V98 Undergraduate Research in Software Engineering or SE 4399 Senior Honors in Software Engineering. Students must consult an Academic Advisor before registering in these options.