**OPTIONS FOR COMPUTER SCIENCE MAJOR GUIDED ELECTIVES**

**(2019-2020)**

Students are required to take 9 hours of major guided electives.

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| **Guided Elective Option** | **Pre-Requisite Course** |
| CS 4301Special Topics in Computer Science | CE/CS/SE/TE 3345 |
| CS 4314 Intelligent Systems Analysis | CGS 4313 or consent of Instructor |
| CS 4315Intelligent Systems Design | CGS 4313 or consent of Instructor |
| CS 4332Introduction to Programming Video Games | CE/CS/SE/TE 3345 |
| CS 4334Numerical Analysis | (Math 2370 or CE/CS 1337) and Math 2418, Math 2451  |
| CS 4336Advanced JAVA | CE/CS 2336 or Equivalent |
| CS 4352Human Computer Interactions I | None |
| CS 4353Human Computer Interactions II | None |
| CS 4361Computer Graphics | Math 2418, CE/CS 2336, and CE/CS/SE/TE 3345 or Equivalent |
| CS 4365Artificial Intelligence | CE/CS/SE/TE 3345 or Equivalent |
| CS 4375Introduction to Machine Learning | CS/SE 3341 and CE/CS/SE/TE 3345 or Equivalent |
| CS/SE 4376Object Oriented Programming Systems | CE/CS 2336 with a C or better or Equivalent |
| CS 4386Compiler Design | CE/CS/SE/TE 3345 or Equivalent |
| CS 4389Data & Applications Security | CS/SE 4347 |
| CS 4390Computer Networks | CE/CS/SE/TE 3345 or Equivalent |
| CS 4391Intro to Computer Vision | CE/CS/SE/TE 3345 or Equivalent |
| CS 4392Computer Animation | Math 2418 and CE/CS/SE/TE 3345 or Equivalent |
| CS 4393Computer and Network Security | CE/CS/SE/TE 4348 or Equivalent |
| CS 4394Implementation 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 4396Networking Laboratory | CS 4390 or Equivalent |
| CS 4397Embedded Computer Systems | CE/CS/SE/TE 4348 or Equivalent |
| CS 4398Digital Forensics | CE/CS/SE/TE 4348 and CE/CS/TE 4390 or Equivalent |
| CS 4V95 or CS 4301 Undergraduate Topics in Computer Science | Varies by course topic |
| EE 4325Introduction to VLSI Design | CS 4341 |
| SE 4351Requirements Engineering | SE 3306 and CE/CS/SE 3354 or Consent of instructor |
| SE 4352Software Architecture and Design | SE 3306 and CE/CS/SE 3354 or Consent of instructor |
| SE 4367Software Testing, Verification, Validation and Quality Assurance | SE 3306 and CE/CS/SE 3354 or Consent of instructor |
| SE 4381Software Project Planning and Management  | CE/CS/SE 3354 |

Students may also use CS 4V98 Undergraduate Research in Computer Science or CS 4399 Senior Honors in Computer Science. Students must consult an Academic Advisor before registering in these options.