Computer Science (Certificate)

Those interested in developing their computer science knowledge and skills, but not ready to commit to a degree program, might consider the online/on-campus Computer Science Graduate Certificate. Students who complete the certificate will gain in-depth knowledge in Computer Science concepts, methods and tools. Applicants are expected to have an accredited Bachelor of Science degree in Computer Science or any sciences or engineering discipline. A minimum GPA of 3.0, on a 4-point scale, is also expected. The GRE is not required for admission.

Financial aid is not available through our program. Interested applicants will need to review other means of assistance, if needed.

Certificate in Computer Science

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<th>Code</th>
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<th>Hours</th>
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**Required Courses**

Select a minimum of four CSC courses at the 500- or 700-level – see optional tracks listed below

Total Hours 12

**Computer Science Foundations Track**

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**Theory Core**

Complete two

CSC 503  Computational Applied Logic
CSC 505  Design and Analysis Of Algorithms
CSC 512  Compiler Construction
CSC 565  Graph Theory
CSC 574  Computer and Network Security
CSC 579  Introduction to Computer Performance Modeling
CSC 580  Numerical Analysis I
CSC 707  Automata, Languages and Computability Theory

**Systems Core**

Complete two

CSC 501  Operating Systems Principles

CSC 506  Architecture Of Parallel Computers
CSC 510  Software Engineering
CSC 514  Foundations of Cryptography
CSC 520  Artificial Intelligence I
CSC 540  Database Management concepts and Systems
CSC 561  Principles of Computer Graphics
CSC 570  Computer Networks

Total Hours 12

**Networking Track**

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**Core Courses**

Complete at least one 3-6

CSC 570  Computer Networks
CSC 573  Internet Protocols

**Elective Courses**

Complete at least two 6-9

CSC 574  Computer and Network Security
CSC 575  Introduction to Wireless Networking
CSC 577  Switched Network Management
CSC 591  Special Topics In Computer Science (Topics Include: Internet of Things Analytics; Software Defined Networking; Internet of Things: Application and Implementation; Internet of Things: A Primer; Network Design and Management; Network Science;)
CSC 773  Advanced Topics in Internet Protocols
### Security/Privacy Track

<table>
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<tr>
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<th>Title</th>
<th>Hours</th>
<th>Counts towards</th>
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<tbody>
<tr>
<td>CSC 574</td>
<td>Computer and Network Security</td>
<td>3</td>
<td>Core Course</td>
</tr>
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</table>

**Total Hours** 12

**Core Course**

Following courses is required to complete the Security/Privacy Track:

- CSC 574 Computer and Network Security

**Elective Courses**

Complete at least three

- CSC 514 Foundations of Cryptography
- CSC 515 Software Security
- CSC 705 Operating Systems Security
- CSC 533 Privacy in the Digital Age
- CSC 591 Special Topics In Computer Science

**Total Hours** 12

### Systems Track

<table>
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<th>Code</th>
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<th>Hours</th>
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<tbody>
<tr>
<td>CSC 501</td>
<td>Operating Systems Principles</td>
<td>3-6</td>
<td>Core Courses</td>
</tr>
<tr>
<td>CSC 548</td>
<td>Parallel Systems</td>
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</table>

**Elective Courses**

Complete at least two

- CSC 506 Architecture Of Parallel Computers
- CSC 512 Compiler Construction
- CSC 547 Cloud Computing Technology
- CSC 568 Enterprise Storage Architecture
- CSC 591 Special Topics In Computer Science (Topics Include: Data-Intensive Computing; Reliable Time Computer Systems)

**Total Hours** 12