I-Courses\(^1\)

Full-time Ph.D. students must take at least 2 foundation courses and at least 1 "I" course in first year. However, it is expected that most students will take all 3 foundation courses in first year. Students should contact course instructors to ensure they have the necessary background.

**Interaction Core**
- GCCIS-HCIN-600 Research Methods (HCI)
- GCCIS-HCIN-610 Foundations of HCI
- GCCIS-HCIN-660 Fundamentals of Instructional Technology
- GCCIS-HCIN-700 Current Topics in HCI
- GCCIS-HCIN-722 HCI with mobile, wearable, and ubiquitous devices
- GCCIS-ISTE-782 Visual Analytics

**Infrastructure Core**
- GCCIS-SWEN-610 Foundations of Software Engineering
- GCCIS-CSCI-651 Foundations of Computer Networks
- GCCIS-CSCI-652 Distributed Systems
- GCCIS-CSCI-654 Foundations of Parallel Computing
- KGCOE-CMPE-661 Hardware and Software Design for Cryptographic Applications
- GCCIS-CSEC-741 Sensor and SCADA Security

**Informatics Core**
- GCCIS-CSCI-620 Introduction to Big Data
- GCCIS-CSCI-630 Foundations of Artificial Intelligent
- GCCIS-CSCI-662 Foundations of Cryptography
- KGCOE-CMPE-677 Machine Intelligence
- GCCIS-CSEC-710 Deep Learning Security
- GCCIS-CSCI-723 Graph Databases
- GCCIS-CSCI-740 Programming Language Theory
- GCCIS-CISC-862 Computational Modeling and Simulation
- GCCIS-CISC-863 Statistical Machine Learning

**Note:** I-courses should be available to the GCCIS PhD students without requiring them to take other pre-requisite courses.

**Alternative I-courses to fulfill the I-courses requirement**

When I-courses listed above are not available, appropriate graduate courses can be used to fulfill the I-courses requirement if they are selected from the Golisano College Ph.D. program or graduate programs in Golisano College, the College of Engineering, or the College of Science, and approved by the advisor and the Ph.D. director.

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\(^1\) This list was updated by the Curriculum and Assessment Committee and Ph.D. faculty in March 2020.