# Information Science & Technology

## 2019-2020 Catalog Checklist

### UA GENERAL EDUCATION

**COMPOSITION (Select ONE pair)**
- ENGL 101 & ENGL 102 or __ & __
- ENGL 107 & 108 or __ & __
- ENGL 109H __

**MATH**
- MATH 122B or MATH 113 or MATH 116 __

**TIER ONE (select two courses from each)**

- **Individuals and Societies (150)**
  - __
  - __
- **Traditions & Cultures (160)**
  - __
- **Natural Sciences (170)**
  - __

**TIER TWO (select one course from each)**

- **Arts**
  - __
- **Humanities**
  - __
- **Individuals and Societies**
  - __
- **Diversity (can be fulfilled with GE course)**
  - __

**2\textsuperscript{nd} Semester of SECOND LANGUAGE**
- __

### INFORMATION SCIENCE & TECH MAJOR

**ISTA Core (TAKE ALL FIVE)**
- ISTA 100: Great Ideas of the Information Age
- ISTA 116: Statistical Foundations for the Information Age
- ISTA 130*: Computational Thinking and Doing
- ISTA 161: Ethics in a Digital World
  - Typically offered in Fall
  - *CSC 110 can sub for ISTA 130

**MINOR**

- A minor is required for this major. Typically, Minors are 18 units (6 classes), 9 units of which are typically required to be Upper Division (300 level or greater)

**INTENSIVE COMPUTING (TAKE FIVE COURSES)**

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**RESEARCH METHODS & DATA ANALYSIS**

- ESOC 302: Quantitative Methods for the Digital Marketplace
  - __

**COMPUTATIONAL ARTS & MEDIA (TAKE ONE COURSE)**

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**SOCIETY (TAKE ONE COURSE)**

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**ENGAGEMENT/INDIVIDUAL STUDIES/PROJECTS (TAKE BOTH):**

- Independent Study, Directed Research, or Internship (3 units)
- Senior Capstone: ISTA 498 (3 units)

**Electives (if needed to reach 120 total units/42 UD):**

- Total Units __ / 120
- Upper Division Units __ / 42
- University Level __ / 56

Minimum GPA of 2.0 is required for graduation!

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*Please note that while students can double-dip up to five courses from other departments, at least two Intensive Computing courses MUST have an ISTA/ESOC/LIS prefix.
Information Science & Technology  
2019-2020

It is recommended that students complete ISTA 130 and 116 before taking Intensive Computing coursework. Some coursework also requires ISTA 131 or advanced programming or Math pre-requisites.

Intensive Computing (Select FIVE of the courses below)
Please note that while students can double-dip up to five courses from other departments, at least two Intensive Computing courses MUST have an ISTA/ESOC/LIS prefix.

INTENSIVE COMPUTING COURSEWORK
ISTA 311: Foundations of Information and Inference  
*Requires ISTA 130 and ISTA 116
ISTA 321: Data Mining and Discovery  
*Requires ISTA 116
ISTA 416/516: Introduction to Human Computer Interaction  
*ISTA 130 or CSC 110 or ECE 175 required. ISTA 350 or CSC 120 recommended. Not offered in Fall 2019
ISTA 424: Virtual Reality  
*A “C” or higher in ISTA 130 or CSC 110 or ECE 175 required. ISTA 350 or CSC 120 recommended. Knowledge of object-oriented programming essential for course.
ISTA 425: Algorithms for Games  
*ISTA 130 or CSC 110 or ECE 175 required. ISTA 350 or CSC 120 recommended. C# and Unity used in course.
ISTA 429: Applied Cyberinfrastructure Concepts  
*No pre-requisites. Second semester programming (CSC 120 or ISTA 131) recommended but not required. Typically offered in Fall only.
ISTA 451/551: Game Development  
*ISTA 130 or CSC 110 required. ISTA 350 or CSC 120 recommended
LIS 470: Database Development and Management Typically offered in Fall only.

MATH-INTENSIVE COURSEWORK
ISTA 421/521: Introduction to Machine Learning  
*Requires Calc I and II, Linear Algebra (MATH 313), and ISTA 311 or consent of instructor  
Typically offered in Fall only

PROGRAMMING-INTENSIVE OPTIONS
ISTA 331: Principles of Data Science  
*Requires ISTA 116, ISTA 130, and 131 Typically offered in Fall only
ISTA 350: Programming for Informatics Applications  
Typically offered in Spring only  
*Requires ISTA 116, ISTA 130, and 131
ISTA 355: Introduction to Natural Language Processing Not offered in Fall 2019  
*ISTA 131 or CSC 120 required.
ISTA 455: Natural Language Processing Not offered in Fall 2019  
*ISTA 350 or ISTA 355 required
ISTA 450/550: Artificial Intelligence Typically offered in Spring only  
*Requires ISTA 350 or CSC 245 or MATH 243 or consent of instructor
ISTA 457: Neural Networks  
*Requires ISTA 350 or CSC 345 or NSCS 344 or consent of instructor.
OTHER COURSEWORK AVAILABLE FOR INTENSIVE COMPUTING REQUIREMENT

Please note that while students can double-dip up to five courses from other departments, at least two Intensive Computing courses MUST have an ISTA/LIS prefix.

MATH 129: Calculus II
MATH 313: Linear Algebra
  *Requires MATH 129
GEOG 417: Geographic Information Systems for Natural and Social Sciences
CSC 120/CSC 127B: Introduction to Computer Programming
  *Requires CSC 110/127A
CSC 337: Web Programming
  *Requires CSC 110 or ISTA 130
CSC 252: Computer Organization
  *Requires CSC 210. Must be CS major
CSC 245: Introduction to Discrete Structures
  *Requires CSC 120. Must be CS major
CSC 345: Analysis of Discrete Structures
  *Requires CSC 245 and 210. Must be CSC major
CSC 335: Object-Oriented Programming and Design
  *Requires CSC 210. Must be CSC major

Computational Arts & Media (Select ONE course)
ISTA 230: Introduction to Web Design and Development
ISTA 251: Introduction to Game Design
ISTA 301: Computing and the Arts
ISTA 302: Technology of Sound
ISTA 303: Introduction to Creative Coding
  *ISTA 130 or CSC 110 or ECE 175 required.
ART/FA 432A: Interactivity
ART/FA 437A: Foundation Digital 3D Modeling, Rendering and Rapid Prototyping
ESOC 300: Digital Storytelling and Culture
ESOC 340: Information, Multimedia Design, and the Moving Image
LING 388: Language and Computers

Society (Select ONE course)
ISTA 263: Learning in the Information Age
ESOC 213: The Past and New Media
ESOC 313: Digital Discourse and Identity
ESOC 314: Theories of New Media
ESOC 315: From Publishing to Papyrus
ESOC 316: Digital Commerce
ESOC 317: Digital Crime
ESOC 318: Disruptive Technologies
ESOC 330: Digital Dilemmas
ESOC 477: Information Security
ESOC 488: Special Topics