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)

**2nd 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
  *CSC 110 can sub for ISTA 130

*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.

**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)**

**RESEARCH METHODS & DATA ANALYSIS**
- ESOC 302: Quantitative Methods for the Digital Marketplace

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

**SOCIETY (TAKE ONE COURSE)**

**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
Upper Division Units
University Level
Minimum GPA of 2.0 is required for graduation!

* ISTA 131 is typically offered in Fall semester and requires ISTA 130. The rest of the core can be taken in any order.
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*It is recommended that students complete ISTA 130 and 116 before taking Intensive Computing coursework. Some coursework also requires ISTA 131 or 350.

Intensive Computing (Select FIVE of the courses below)

*Please note that while students can double-dip up to four courses from other departments, at least two Intensive Computing courses MUST be from the School of Information (have an ISTA/ESOC/LIS prefix).

HUMAN-COMPUTER INTERACTION
ISTA 416/516: Introduction to Human Computer Interaction
  *ISTA 130 or CSC 110 or ECE 175 required. Can serve as Intensive Computing or Computational Arts. Not both.

APPLIED DATA SCIENCE
ISTA 321: Data Mining
ISTA 331: Principles and Practices of Data Science
  *Requires ISTA 131 and 116
ESOC 414: Computational Social Science
  *Requires ISTA 116 or ESOC 214. Not currently offered.

DEALING WITH BIG DATA
ISTA 322: Data Engineering (Coming Fall 2020)
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.
LIS 470: Database Development and Management
  Typically offered in Fall only.

PROBABILITY AND INFERENCE
ISTA 311: Foundations of Information and Inference
  *Requires ISTA 130 and ISTA 116
ISTA 410: Bayesian Modeling
  Not currently offered.

PROGRAMMING FOUNDATIONS
ISTA 350: Programming for Informatics Applications
  *Requires ISTA 131 and 116.

DATA SCIENCE AND MACHINE LEARNING METHODS
ISTA 355: Intro to Natural Language Processing
  *Requires ISTA 350. Not currently offered.
ISTA 439: Statistical Natural Language Processing New! Available now!
ISTA 455: Applied Natural Language Processing
  *Requires 350. Not currently offered.
ISTA 457: Neural Networks.
  *Requires 350 or CSC 345 or ECE 275 or NSCS 344. Not offered in Spring 2020.
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
ALGORITHM DEVELOPMENT
ISTA 450/550: Artificial Intelligence *Typically offered in Spring only*
  *Requires ISTA 350 or CSC 245 or MATH 243 or consent of instructor*

GAME DEVELOPMENT AND VIRTUAL REALITY
ISTA 424: Virtual Reality
  *ISTA 350 or CSC 335 required
  Can serve as Intensive Computing or Computational Arts. Not both.
ISTA 425: Algorithms for Games
  *ISTA 350 or CSC 335 required
  Can serve as Intensive Computing or Computational Arts. Not both.
ISTA 451/551: Game Development
  *ISTA 350 or CSC 345 required.
  Can serve as Intensive Computing or Computational Arts. Not both.
OTHER COURSEWORK AVAILABLE FOR INTENSIVE COMPUTING REQUIREMENT

Please note that while students can double-dip up to four courses from other departments, at least two Intensive Computing courses MUST be from the School of Information (have an ISTA/ESOC/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

Computer Science majors only:
CSC 252: Computer Organization
*Requires CSC 210. Must be CSC major
CSC 245: Introduction to Discrete Structures
*Requires CSC 120. Must be CSC 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
Not offered Spring 2020
ISTA 303: Introduction to Creative Coding
*ISTA 130 or CSC 110 or ECE 175 required.
  Can serve as Intensive Computing or Computational Arts. Not both.
  Not offered in Spring 2020
ISTA 403: Advanced Creative Coding Not offered
ISTA 401: Designing Installations Available now!
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