MINOR CHECKLIST: INFORMATION SCIENCE, TECHNOLOGY & THE ARTS
This minor is designed to provide students in all majors experience in dealing with information - deriving it, managing it, and extracting meaning from it!

ISTA Core
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 __

Upper Division ISTA Coursework (take two)

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Total Units __/19
Upper Division Units __/6
A minimum GPA of 2.0 required for this minor.

*requires Math 107 or Math 112

A note on CSC 127A/B and CSC 110/120: CSC 110 will double-dip with ISTA 130; students can ask to double-dip CSC 127A if they have the Python experience.

ISTA advisor information:
Laura Owen
Undergraduate Academic Advisor
School of Information
lauraowen@email.arizona.edu
Upper Division ISTA Coursework

Note: not all classes are available every semester. Some courses have prerequisite requirements.

NEW!

**ISTA 495: Special Topics**

**COMPUTATIONAL ARTS**

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.
    Not offered in Fall 2020
ISTA 403: Advanced Creative Coding
ISTA 401: Designing Installations

**ISTA 330: Advanced Web Design**
  Requires ISTA 230

**HUMAN-COMPUTER INTERACTION**

ISTA 352: Images: Past, Present, Future
ISTA 416/516: Introduction to Human Computer Interaction
  *ISTA 130 or CSC 110 or ECE 175 required.

**APPLIED DATA SCIENCE**

ISTA 321: Data Mining
  *Requires ISTA 116.
ISTA 331: Principles and Practices of Data Science
  *Requires ISTA 131 and 116

**DEALING WITH BIG DATA**

ISTA 322: Data Engineering
  *ISTA 130 required
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.

**PROBABILITY AND INFERENCE**

ISTA 311: Foundations of Information and Inference
  *Requires ISTA 130 and ISTA 116
ISTA 410: Bayesian Modeling
  * Requires MAT 223 and MATH 313 and MATH 464 and (ISTA 350 or CSC 345) or ISTA 421 or consent of instructor

**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
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.
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

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 210 required
ISTA 425: Algorithms for Games
  *ISTA 350 or CSC 210 required
ISTA 451/551: Game Development
  *ISTA 350 or CSC 210 required.

Students can double-dip a max of 7 units (two classes) from other departments, providing the double-dipping is allowed by the other department’s double-dipping policy.

For catalog years Fall 2017 or later, Upper Division CSC courses which can be used in ISTA minor are: CSC 335, 337, 345