

**Information Science (B.S.)
2022 and Beyond Catalog Grad Plan
(Pima Community College to UArizona)**

GENERAL EDUCATION

COMPOSITION:

WRT 101 & WRT 102

MATH:

MAT 212 or MAT 220

AGEC-A: (Complete appropriate PCC Courses)

- Arts and Humanities
- Social and Behavioral Sciences
- Physical & Biological Sciences
- Intensive Writing, Critical Inquiry
- Cultural Diversity (Ethnic/Race/Gender) Awareness
- Global Awareness
- Other Requirements

SECOND LANGUAGE:

0-20 units as needed to meet 2nd semester proficiency

MAJOR

INTRO TO PROGRAMMING: (Take One)

PCC Course: CIS 129

OR:

ISTA 130*: Computational Thinking and Doing

ISTA CORE: (Take All Four)

- ISTA 100: Great Ideas of the Information Age
- ISTA 116[^]: Statistical Foundations for the Info. Age
- ISTA 131^a: Dealing with Data
- ISTA 161: Ethics in a Digital World

[^] ISTA 116 requires MATH 107 or 112.
^{*} CSC 110 approved substitute for ISTA 130
^a ISTA 131 requires ISTA 130.

RESEARCH METHODS: (Take One)

ESOC 302: Quantitative Methods

EMPHASIS (Pick One): See Pages 2 and 3.

INTERACTIVE AND IMMERSIVE TECHNOLOGIES
OR *DATA SCIENCE*

EMPHASIS COURSES: (Take Five - 15 units).

See Pages 2 and 3.

COMPUTATIONAL ARTS & MEDIA: (Take One)

See options on Page 3.

SOCIETY: (Take One)

See options on Page 4.

ENGAGEMENT, INDIVIDUAL STUDIES, INTERNSHIP & PROJECTS: (Take One - 3 units)

- ESOC 480: Digital Engagement
- INFO 392/492: Directed Research
- INFO 493: Internship
- ISTA 491: Preceptorship
- ISTA 391: Tutoring
- ISTA/INFO 499: Independent Study

SENIOR THESIS/CAPSTONE: (Take One - 3 units)

ISTA 498: Senior Capstone (3 units)

- 18 units of major courses must be 300-499 level

MINOR or 2nd MAJOR

**ADDITIONAL ELECTIVES
(if needed to reach 120/56/42 UD)**

	Completed	(UD = 300-499)
Recommend 64 Units (from PCC)	/64	
Required 56 Units (UA)		
Required 120 Total Units (PCC/UA)		
Required 42 UD Units (UA)		

Students must choose ONE EMPHASIS: Interactive and Immersive Technologies or Data Science

It is recommended that students complete ISTA 130 and 116 before taking their EMPHASIS coursework.
Some coursework also requires ISTA 131 or ISTA 350.

INTERACTIVE AND IMMERSIVE TECHNOLOGIES – EMPHASIS

(Take Five – 15 units)

ISTA 320: Data Visualization

- *Pre-Req: ISTA 116 **or** ESOC 214.*

ISTA 350: Programming for Informatics Applications

- *Pre-Req: ISTA 131 **and** 116.*

ISTA 416/516: Intro. to Human Computer Interaction

- *Can serve for IIT Emphasis **or** Computational Arts. Not both.*

ISTA 424: Virtual Reality

- *Pre-Req: ISTA 350 **or** CSC 210 **or** GAME 351 required.*
- *Can serve for IIT Emphasis **or** Computational Arts. Not both.*

ISTA 425: Algorithms for Games

- *Pre-Req: ISTA 350 **or** CSC 210 **or** GAME 351 required.*
- *Can serve for IIT Emphasis **or** Computational Arts. Not both.*

ISTA 451/551: Game Development

- *Pre-Req: ISTA 350 **or** CSC 210 **or** GAME 351 required.*
- *Can serve for IIT Emphasis **or** Computational Arts. Not both.*

CSC 337: Web Programming

- *Pre-Req: CSC 110 **or** ISTA 130.*

ISTA 330: Advanced Web Design

- *Pre-Req: ISTA 230 **and** ISTA 130/CSC 110 **or** Pre-Req: CSC 337.*
- *Can serve for IIT Emphasis **or** Computational Arts. Not both.*

ISTA 303: Introduction to Creative Coding

- *Pre-Req: ISTA 130 **or** CSC 110 **or** ECE 175.*
- *Can serve for IIT Emphasis **or** Computational Arts. Not both.*

ISTA 403: Advanced Creative Coding (*Not currently offered*)

- *Pre-Req: ISTA 303.*
- *Can serve for IIT Emphasis **or** Computational Arts. Not both.*

ISTA 495: Special Topics

LING/SLHS 478: Speech Technology

DATA SCIENCE – EMPHASIS:

(Take Five – 15 units)

ISTA 431: Data Warehousing and Analytics in the Cloud

ISTA/CSC 439: Statistical Natural Language Processing

ISTA 453: Biodiversity Informatics

GEOG/GIST/RNR 417: Geographic Information Systems for Naturals and Social Sciences

LIS 470: Database Development and Management

ISTA 311: Foundations of Information and Inference

- *Pre-Req: ISTA 130 **and** ISTA 116.*

ISTA 320: Data Visualization

- *Pre-Req: ISTA 116 **or** ESOC 214.*

ISTA 321: Data Mining

- *Pre-Req: ISTA 116 **or** ESOC 214.*

ISTA 322: Data Engineering

- *Pre-Req: ISTA 130 **or** CSC 110 **or** ECE 175.*

ISTA 331: Principles and Practices of Data Science

- *Pre-Req: ISTA 131 **and** ISTA 116.*

ISTA 350: Programming for Informatics Applications

- *Pre-Req: ISTA 131 **and** 116.*

ISTA 355: Intro to Natural Language Processing

- *Pre-Req: ISTA 131.*

- ISTA 429: Applied Cyberinfrastructure Concepts (*Typically offered in Fall only*)
- *Second semester programming (CSC 120 or ISTA 131) recommended, but not required.*
- ISTA 450/550: Artificial Intelligence (*Typically offered in Spring only*)
- *Pre-Req: ISTA 350 or CSC 245 or MATH 243, or consent of instructor*
- ISTA 455: Applied Natural Language Processing (*Not currently offered*)
- *Pre-Req: ISTA 350.*
- ISTA 457: Neural Networks
- *Pre-Req: ISTA 350 or CSC 345 or ECE 275 or NSCS 344.*
- ESOC 414: Computational Social Science (*Not currently offered*)
- *Pre-Req: ISTA 116 or ESOC 214.*
- ISTA 456: Text Retrieval and Web Search (*Not currently offered*)
- MATH 129: Calculus II
- *Pre-Req: MATH 122B or MATH 125*
- MATH 313: Linear Algebra
- *Pre-Req: MATH 129*
- ISTA 421/521: Introduction to Machine Learning (*Typically offered in Fall only*)
- *Pre-Req: MATH 129, MATH 313: Linear Algebra, and ISTA 311, or consent of instructor.*
- ISTA 410: Bayesian Modeling
- *Pre-Req: MAT 223 and MATH 313 and MATH 464 and EITHER: ISTA 350 or CSC 345*
 - *Alternate Pre-Req: ISTA 421*
 - *Alternate Pre-Req: consent of instructor*

COMPUTATIONAL ARTS & MEDIA (CA):

(Take One – 3 units *)

***Strongly Recommend Upper Division 300-499 level**

- ISTA 301: Computing and the Arts
- ISTA 302: Technology of Sound
- ISTA 303: Introduction to Creative Coding
- *Pre-Req: ISTA 130 or CSC 110 or ECE 175.*
 - *Can serve for IIT Emphasis or Computational Arts. Not both.*
- ISTA 329: Introduction to Web Design & Development (*formerly ISTA 230*)
- ISTA 330: Advanced Web Design
- *Pre-Req: ISTA 230 and ISTA 130/CSC 110 or CSC 337.*
 - *Can serve for IIT Emphasis or Computational Arts. Not both.*
- ISTA 401: Designing Installations
- ISTA 403: Advanced Creative Coding Not offered
- *Pre-Req: ISTA 303.*
 - *Can serve for IIT Emphasis or Computational Arts. Not both.*
- ISTA 416/516: Intro. to Human Computer Interaction
- *Can serve for IIT Emphasis or Computational Arts. Not both.*
- ISTA 424: Virtual Reality
- *Pre-Req: ISTA 350 or CSC 210 or GAME 351 required.*
 - *Can serve for IIT Emphasis or Computational Arts. Not both.*
- ISTA 425: Algorithms for Games
- *Pre-Req: ISTA 350 or CSC 210 or GAME 351 required.*
 - *Can serve for IIT Emphasis or Computational Arts. Not both.*
- ISTA 451/551: Game Development
- *Pre-Req: ISTA 350 or CSC 210 or GAME 351 required.*
 - *Can serve for IIT Emphasis or Computational Arts. Not both.*
- 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:
(Take One – 3 units)

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 319: Instructional Technologies
ESOC 330: Digital Dilemmas
ESOC 477: Information Security
ESOC 478: Science Information and its Presentation
ESOC 495: Special Topics