**School of Computing & Augmented Intelligence**  
**Informatics, BS (ESCPIBS)**  
**Updated: 2024-2025 Catalog Year Requirements - General Studies GOLD**

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<th>SPRING-2</th>
<th>FALL-3</th>
<th>SPRING-4</th>
<th>FALL-5</th>
<th>SPRING-6</th>
<th>FALL-7</th>
<th>SPRING-8</th>
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<tbody>
<tr>
<td>ENG 101 (3) 1st-Year Composition</td>
<td>ENG 102 (3) 1st-Year Composition</td>
<td>Lab Science SCIT (4)</td>
<td>Lab Science SCIT (4)</td>
<td>GCSI (3)</td>
<td><strong>Informatics Focus Area (3)</strong></td>
<td><strong>Upper Division Informatics Elective (3)</strong></td>
<td><strong>Upper Division Informatics Elective (3)</strong></td>
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<tr>
<td>ASU 101-CAI (1) ASU Experience</td>
<td>MAT 242 (2) Elementary Linear Algebra</td>
<td>MAT 243 (3) Discrete Mathematical Structures</td>
<td>CPI 200 (3) Mathematical Foundations of Informatics (S)</td>
<td>Statistics Course (3)</td>
<td><strong>Informatics Focus Area (3)</strong></td>
<td><strong>Upper Division Informatics Elective (3)</strong></td>
<td><strong>Upper Division Informatics Elective (3)</strong></td>
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<tr>
<td>CPI 101 (3) Introduction to Informatics</td>
<td>CSE 205 (3) Object-Oriented Programming &amp; Data Structures</td>
<td>IEE 305 (3) Information Systems Engineering</td>
<td><strong>Informatics Focus Area (3)</strong></td>
<td>CSE 301 (1) Computing Ethics</td>
<td>CPI 350 (3) Evaluation of Informatics Systems (S)</td>
<td>CPI 360 (3) Decision Making &amp; Problem Solving (F)</td>
<td>CSE 485 (3) Capstone I</td>
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<td>CSE 110 (3) Principles of Programming QTRS</td>
<td>SOBE (3)</td>
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<td>CPI 221 (3) Advanced Object-Oriented Principles Using Java (S)</td>
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<td><strong>Informatics Focus Area (3)</strong></td>
<td>CSE 463 (3) Introduction to Human Computer Interaction (S)</td>
<td>CSE 486 (3) Capstone II</td>
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<td>Lab Science SCIT (4)</td>
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<td><strong>Informatics Focus Area (3)</strong></td>
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<td>MAT 210 (3) Brief Calculus OR MAT 265 (3) Calc for Engineers I MATH</td>
<td>CPI 200 (3) Mathematical Foundations of Informatics (S)</td>
<td>Lab Science SCIT (4)</td>
<td><strong>Informatics Focus Area (3)</strong></td>
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**NOTES:**  
1. International students may take ENG 107 and ENG 108. Students placing in to ENG 105 will replace ENG 101 with a recommended course.  
2. **See SCAI Advising Center or SCAI Website (https://scail.engineering.asu.edu/informatics/) for degree requirements, focus area, and electives.**  
3. + All Upper division XXX courses may require additional prerequisites. Please check the catalog for specific course information.  
4. # All prerequisite coursework must be completed prior to taking CSE 485 (CSE 310; CSE 463; CPI 350; ENG 101, 105, or 107).  

**Shaded courses designate “Critical Requirements” and must be completed as described above to remain on-track. Twice off-track students will be required to change their major.**

Minimum “C” grade is required in all major courses (see major map for details).

All ASU students must complete required university general studies and First Year Composition. HYAD, SOBE, AMIT, CIVI, GCSI, & SUST classes can be taken in any order.
Term 1
**MAT 210: Brief Calculus** - Differential and integral calculus of elementary functions with applications. Not open to students with credit in MAT 260 or 270 or 290.

**Or MAT 265: Calculus for Engineers I (MATH)** - Limits and continuity, differential calculus of functions of one variable, introduction to integration. Not open to students with credit in MAT 270.

**CPI 101: Introduction to Informatics** - Concepts, tools, techniques, and applications of informatics. Includes overview of programming, data management, visualization, modeling, and social implications.


**ASU 101-CSE: The ASU Experience**

**ENG 101: First-Year Composition**

Humanities, Fine Arts & Design (HUAD)

**Term 2**


**CSE 205: Object-Oriented Programming & Data Structures** - Problem solving by programming with an object-oriented programming language. Introduces data structures. Overview of computer science topics.

**ENG 102: First-Year Composition**

American Institutions (AMIT)

Humanities, Fine Arts & Design (HUAD)

**Term 3**

**MAT 243: Discrete Mathematical Structures** - Logic, sets, functions, elementary number theory and combinatorics, recursive algorithms, and mathematical reasoning, including induction. Emphasizes connections to computer science.

**IEE 305: Information Systems Engineering** - Overview of computer and information systems applications. Topics include client/server; distributed computing; networks; process modeling; e-commerce; enterprise applications; Internet.

**CPI 220: Applied Data Structures and Algorithms** - Thorough grounding in applied knowledge and skills related to algorithms and data structures used in the development of software designed to solve complex problems. Overview of computational and critical thinking skills that can be called upon to analyze and solve complex problems in multiple domains.

Lab Science: (SCIT) - See major map link for options.

Social & Behavioral Sciences (SOBE)

**Term 4**

**CPI 200: Mathematical Foundations of Informatics** - Practical introduction to the mathematics necessary for studies in informatics. Topics include discrete math, analytic geometry, calculus, and linear algebra.


Lab Science: (SCIT) - See major map link for options

Governance & Civic Engagement (CIVI)

Global Communities, Societies, and Individuals (GCSI)

**Term 5**

**CPI 360: Decision Making & Problem Solving** - Practical use of database systems, computer graphics, and modeling to inform decision making.

**CPI 310: Web-Based Information Management Systems** - Relational database design, entity-relationship modeling, relational algebra, SQL, database access through Web, Web data management, introduction to XML, fundamentals of Web application development, Web server architectures, lecture, in-class lab activities.

**CSE 301: Computing Ethics** - Ethics for computing majors: history of computing, intellectual property, privacy, ethical frameworks, professional ethical responsibilities, and risks of computer-based systems.

**STP 226: Elements of Statistics** - Basic concepts and methods of statistics, including descriptive statistics, significance tests, estimation, sampling, and correlation.

**Or STP 231: Statistics for Biosciences** - Concepts and methods of statistics; display and summary of data, interval estimation, hypothesis testing, correlation, regression. Applications to biological sciences.

**STP 420: Introductory Applied Statistic** - Introductory probability, descriptive statistics, sampling distributions, parameter estimation, tests of hypotheses, chi-square.


**Or GIS 470: Statistics for Geographers** - Statistical techniques applied to the analysis of spatial distributions and relationships. Introduces models and theory in geography.

Informatics Focus Area

Informatics Focus Area

**Term 6**

**CPI 350: Evaluation of Informatics Systems** - Methods for evaluation of informatics systems, including design of computational and human experiments, ethnography, and analytic techniques.


Informatics Focus Area

Informatics Focus Area

Global Sustainability (SUST)

**Term 7**

**CPI 485: Capstone I** - Team-based design of an informatics system; working with clients; development of requirements, use cases, class/object diagrams, and plans for quality assurance and other evaluations; technical communication; teamwork.

Upper Division Informatics Elective

Upper Division Informatics Elective

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Upper Division Informatics Elective

**Term 8**

**CPI 486: Capstone II** - Implementation of the informatics system designed during CPI 485; work processes; keeping designs consistent with implementations; conducting QA and other evaluations; technical communication; teamwork.

Upper Division Informatics Elective

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