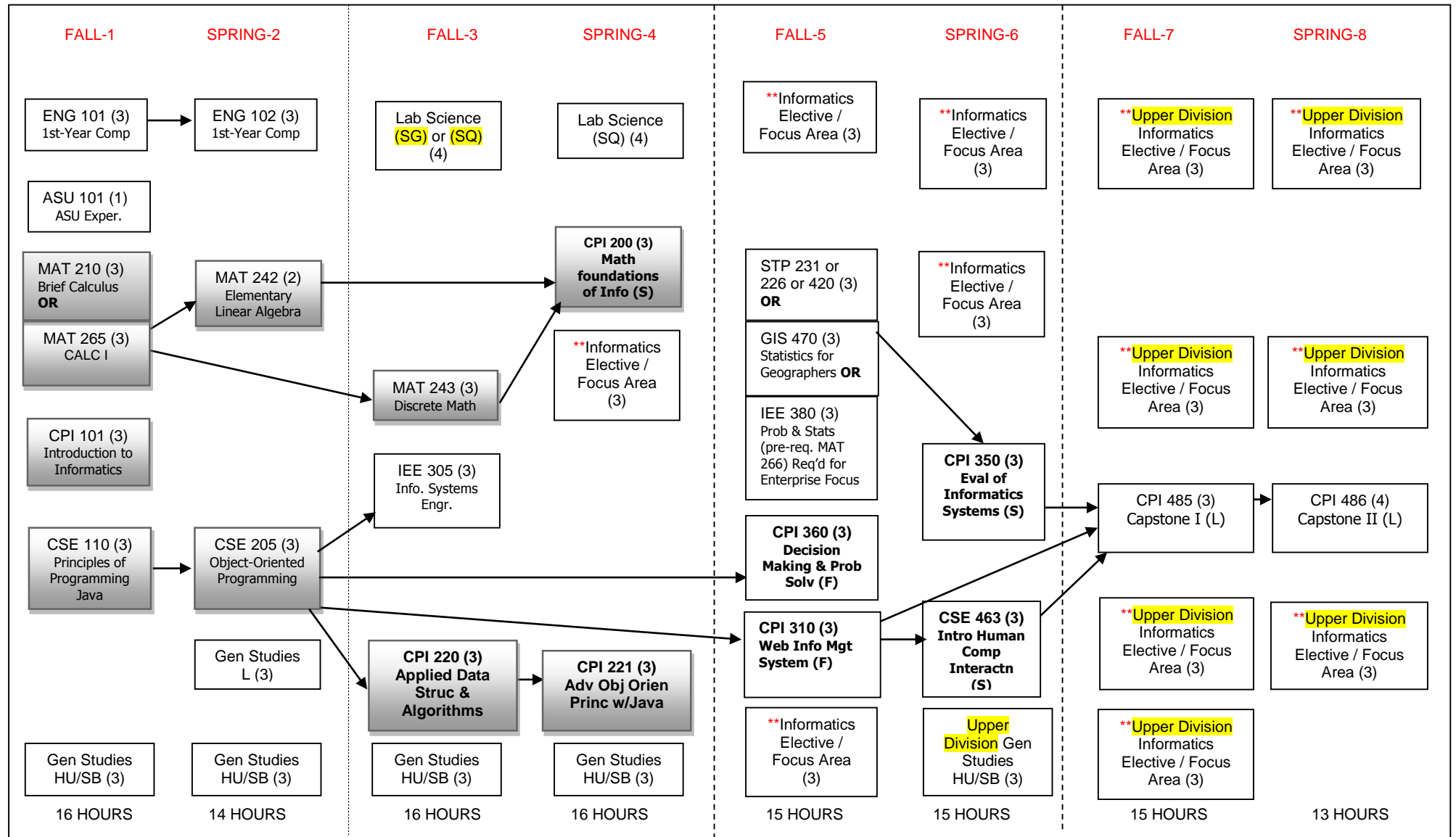


Informatics, BS
Bachelor of Science, 2016-2017 Catalog Year
 ESCPIBS

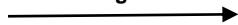


Notes: ** See CIDSE Advising Center or CIDSE Website (http://cidse.engineering.asu.edu/degree_requirements_bs_inform/) for approved lab science sequence courses, electives or focus area courses.

Shaded courses designates critical requirements. Minimum "C" grade required in all CPI and CSE required courses.

Bolded courses are only offered during certain semesters

Prerequisite



- Cultural
- Global
- Historical

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-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.

CSE 110: Principles of Programming with Java- Concepts of problem solving using Java, algorithm design, structured programming, fundamental algorithms and techniques, and computer systems concepts. Social and ethical responsibility.

ASU 101-CSE: The ASU Experience

ENG 101: First-Year Composition

HU/SB: Humanities, Fine Arts & Design or Social & Behavioral Sciences

Term 2

MAT 242: Elementary Linear Algebra-Introduces matrices, systems of linear equations, determinants, vector spaces, linear transformations, and eigenvalues. Emphasizes development of computational skills.

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

General Elective: *Elective cannot include CSE, MAT, PHY, BIO, CHM

HU/SB: Humanities, Fine Arts & Design or Social & Behavioral Sciences

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.

Basic Lab Science: (SG or SQ)-see major map link for options

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.

HU/SB: Humanities, Fine Arts & Design or Social & Behavioral Sciences

Term 4

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

CPI 221: Advanced Object Oriented Principles using Java

Advanced object oriented programming using the Java language. Design concepts and problem solving.

Informatics Elective/ Focus Area

Basic Lab Science: (SQ)-see major map for options

HU/SB: Humanities, Fine Arts & Design or Social & Behavioral Sciences

Term 5

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

CPI 310 : Web Information Mgt System- 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.

STP 420: Introductory Applied Statistics- Introductory probability, descriptive statistics, sampling distributions, parameter estimation, tests of hypotheses, chi-square tests, regression analysis, analysis of variance, and nonparametric tests.

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.

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

Or IEE 380: Probability and Statistics for Engineering Problem Solving

Applications-oriented course with computer-based experience using statistical software for formulating and solving engineering problems

Informatics Elective/ Focus Area

Informatics Elective/ 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.

CSE 463: Intro Human Computer Interaction-Design, evaluate, and implement interactive software intended for human use.

Informatics Elective/ Focus Area

Informatics Elective/ Focus Area

Upper Division HU/SB: Humanities, Fine Arts & Design or Social & Behavioral Sciences

Term 7

CPI 485: 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/ Focus Area

Upper Division Informatics Elective/ Focus Area

Upper Division Informatics Elective/ Focus Area

Upper Division Informatics Elective/ Focus Area

Term 8

CPI 486-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/ Focus Area

Upper Division Informatics Elective/ Focus Area

Upper Division Informatics Elective/ Focus Area