

REQUIREMENT GUIDE: COMPUTER SCIENCE MAJOR

(Requirements are effective FALL 2019 acceptance or later)

COMPUTER SCIENCE GRADUATION REQUIREMENTS

Full list of requirements are available in the academic catalog: <https://catalog.uwp.edu/programs/computer-science/>

- Completion of a minimum of 120 credits including CSCI major and general university requirements.
- An overall degree GPA of 2.00 or higher (including any transfer courses).
- An overall minimum GPA of 2.5 in all courses eligible to meet the computer science major requirements, including courses that meet the CSCI major breadth requirement.

COMPUTER SCIENCE MAJOR TOTAL REQUIRED CREDITS: 72-73

- A. Required Mathematics Course: 5 credits
- B. Required Science Course: 5 credits
- C. Required Major Courses: 62-63 credits
 1. *Computer Science Courses*
 2. *Elective Major Courses*
 3. *Breadth Requirement Courses*

A. REQUIRED MATHEMATICS COURSE (5 credits)

NOTE: If a student's math placement is MATH 111 it is recommended to consider taking winterim and/or summer math courses; degree completion may extend beyond four years taking math only during the fall and spring terms.

COURSE	COURSE NAME	PREREQUISITE(S)	CREDITS	FREQ.
MATH 221	Calculus/Analytic Geometry I*	MATH 112 and 113 or equivalent	5	FA / SP

**Course meets a general education requirement*

B. REQUIRED SCIENCE COURSE (5 credits)

COURSE	COURSE NAME	PREREQUISITE(S)	CREDITS	FREQ.
Choose one 5 credit option:				
CHEM 101	General Chemistry I*	MATH 111 or concurrent enrollment	4	FA / SP
CHEM 103	General Chemistry Lab I	CHEM 101 or concurrent enrollment	1	FA / SP
OR				
PHYS 201	General Physics I*	MATH 221 (C or better); or concurrent enrollment	5	FA / SP

**Course meets a general education requirement*

C. REQUIRED MAJOR COURSES (62-63 credits)

1. Computer Science Courses (41 credits)

COURSE	COURSE NAME	PREREQUISITE(S)	CREDITS	FREQ.
CSCI/MATH 231	Discrete Mathematics	MATH 112 with C or better	3	FA / SP
CSCI 241	Computer Science I*	C or better in MATH 112 and 113, or 114	5	FA / SP
CSCI 242	Computer Science II	C or better in CSCI 241	4	FA / SP
CSCI 245	Assembly Lang. Programming	C or better in CSCI 231, 241; 242 or concurrent enrollment	3	FA
CSCI 309	Probability & Statistics	C or better in MATH 221	3	SP
CSCI 333	Programming Languages	C or better in CSCI 231, 242	3	SP
CSCI 340	Data Struc. & Algor. Design	C or better in CSCI 231, 242	3	SP

CSCI 355	Computer Architecture	<i>C or better in CSCI 245</i>	3	SP
CSCI 370	Operating Systems	<i>C or better in CSCI 242 and 355</i>	3	FA
CSCI 380	Database Mgt. Systems	<i>C or better in CSCI 242</i>	3	FA
CSCI 475	Software Engineering Principles/Practice I	<i>C or better in CSCI 333, 340, 370 or 380</i>	3	FA
CSCI 476	Software Engineering Principles/Engineering II	<i>C or better in CSCI 475</i>	3	SP
CSCI 495	Computer Science Seminar	<i>Any 300-level CSCI course or consent</i>	2	FA

**Course meets a general education requirement*

2. ELECTIVE MAJOR COURSES (12 credits)

COURSE	COURSE NAME	PREREQUISITE(S)	CREDITS	FREQ.
Choose four (4) courses:				
CSCI 405	Artificial Intelligence	<i>C or better in CSCI 333</i>	3	
CSCI 410	Introduction to Data Science	<i>CSCI 242; and CSCI 309 or QM 310; or consent</i>	3	FA
CSCI 411	Programming for Data Science	<i>CSCI 410 or consent</i>	3	SP
CSCI 412	Data Mining & Machine Learning	<i>CSCI 410 or consent</i>	3	
CSCI 413	Big Data Analytics	<i>CSCI 410 or consent</i>	3	
CSCI 420	Computer Graphics	<i>C or better in CSCI 340</i>	3	
CSCI 421	Computer Vision	<i>C or better in CSCI 242</i>	3	
CSCI 424	Client/Server Programming	<i>C or better in CSCI 324 or consent</i>	3	FA
CSCI 431	Computational Models	<i>C or better in CSCI 231</i>	3	
CSCI 435	UNIX System Admin.	<i>C or better in CSCI 275</i>	3	SP
CSCI 440	Compiler Design & Implement.	<i>C or better in CSCI 333 or concurrent enrollment</i>	3	
CSCI 444	Event-Driven Programming	<i>C or better in CSCI 370</i>	3	
CSCI 445	Web Application Security	<i>C or better in CSCI 242 or 322</i>	3	SU
CSCI 467	Computability & Automata	<i>C or better in CSCI 331 or consent</i>	3	
CSCI 469	Embedded Systems Design	<i>CSCI 245</i>	3	
CSCI 477	Computer Comm. and Networks	<i>C or better in CSCI 242, 245</i>	3	
CSCI 478	Network Security	<i>C or better in CSCI 355, 435, 477 or MIS 327</i>	3	
CSCI 479	Info. Systems Security	<i>C or better in CSCI 242 or MIS 328</i>	3	
CSCI 480	Advanced Databases	<i>C or better in CSCI 380</i>	3	

3. BREADTH REQUIREMENT (9-10 credits)

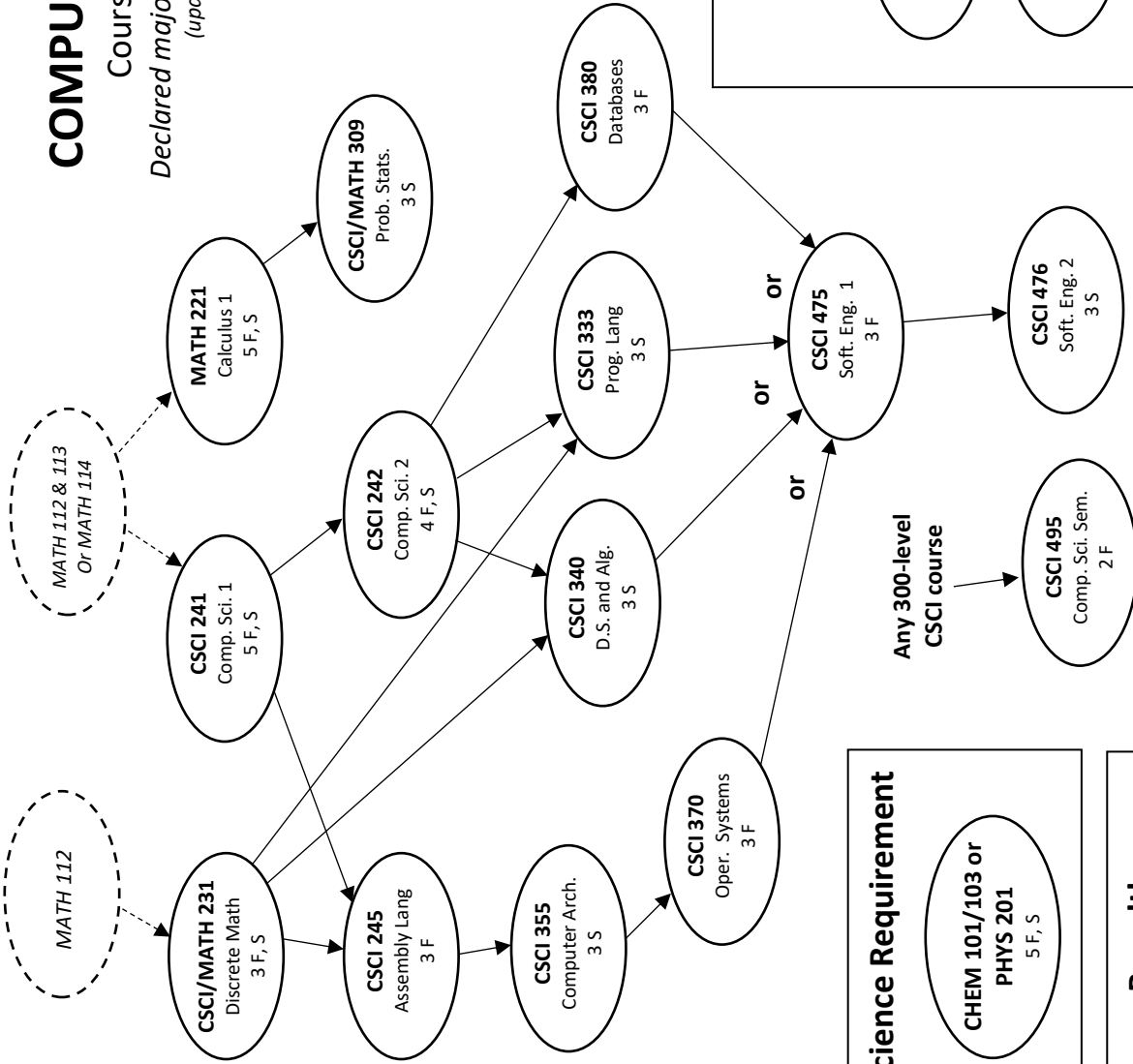
Student must complete a package of 9 or more credits outside of computer science in a coherent collection of courses relevant to computer science.

- **MATH:** MATH 222 Calculus/Analytic Geometry II, MATH 301 Linear Algebra
- **MATH/PHYSICS:** MATH 222 Calculus/Analytic Geometry II, PHYS 202 General Physics II
- **CHEMISTRY:** CHEM 102/104 General Chemistry II/Lab AND either CHEM 206 Quant. Analysis or CHEM 215 Organic/Biochemistry
- **BUSINESS:** Select ANY 3: ACCT 201 Financial Accounting, BUS 272 Legal Environment of Business, FIN 330 Managerial Finance, MGT 349 Organizational Behavior, or MKT 350 Marketing Principles
- **ECONOMICS:** ECON 320 Intermediate Micro Theory or ECON 321 Intermediate Macro Theory, and two additional 300-level ECON courses
- **GEOGRAPHY:** GEOG 350 Cartography/GIS, GEOG 460 Intro. GIS Analysis, GEOG 465 Advanced GIS Applications
- **CRIMINAL JUSTICE:** CRMJ 316 Criminal Procedure, CRMJ 380 Criminal Law, BUS 272 Legal Environment of Business
- **ART:** ART 105 Intro to Graphic Design, ART 377 Interactive Design I and ART 477 Interactive Design II
- **SELF-DESIGNED:** student may submit an individually designed breadth package of 9 or more credits for approval by the CSCI faculty. See the department chair for details.

COMPUTER SCIENCE

Course Flowchart

Declared majors beginning Fall 2019
(updated 12/2021)



Science Requirement

CHEM 101/103 or
PHYS 201
5 F, S

Breadth Requirement

9 or more credit hours
outside of CS in a coherent
collection of courses
relevant to CS.
Refer to academic catalog
for breadth options.

Key

Course Number
Course Name
Credits
F=Fall
S=Spring
Su=Summer
W= Winterim

Prerequisite Course
Not Part of CS Major

Prerequisite →

Elective Major Courses (choose 4 courses)

Select from the following:

CSCI 405 – Artificial Intelligence
CSCI 410 – Intro to Data Science
CSCI 411 – Programming for Data Science
CSCI 412 – Data Mining & Machine Learning
CSCI 413 – Big Data Analytics
CSCI 420 – Computer Graphics
CSCI 421 – Computer Vision
CSCI 424 – Client/Server Programming
CSCI 431 – Computational Models
CSCI 435 – UNIX System Administration
CSCI 440 – Compiler Design & Implementation
CSCI 444 – Event Driven Programming
CSCI 445 – Web Application Security
CSCI 467 – Computability & Automata
CSCI 469 – Embedded Systems Design
CSCI 477 – Computer Communications & Networks
CSCI 478 – Network Security
CSCI 479 – Information Systems Security
CSCI 480 – Advanced Databases

CSCI XXX
Elective
3

CSCI XXX
Elective
3

CSCI XXX
Elective
3

CSCI XXX
Elective
3