

# REQUIREMENT GUIDE:

## COMPUTER SCIENCE MAJOR

*(Requirements are effective FALL 2021 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

#### B. REQUIRED SCIENCE COURSE (5 credits)

Choose one 5 credit option:

COURSE	COURSE NAME	PREREQUISITE(S)	CREDITS	FREQ.
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
<b>OR</b>				
PHYS 201	General Physics I*	MATH 221 (C or better); or concurrent enrollment	5	FA / SP

#### C. REQUIRED MAJOR COURSE (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

## Major in you.

DEPARTMENT OF COMPUTER SCIENCE  
MOLINARO HALL, ROOM 248  
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UNIVERSITY OF  
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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)

*Only (1) 300-level course can be counted toward the elective major courses (either CSCI 323 or CSCI 324, not both)*

Choose four (4) courses:

COURSE	COURSE NAME	PREREQUISITE(S)	CREDITS	FREQ.
CSCI 323*	<i>Mobile Development in Android</i>	<i>CSCI 242 with C or better, or consent</i>	3	FA
CSCI 324*	<i>Mobile Development in iOS</i>	<i>CSCI 323 with C or better, or consent</i>		SP
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 480	Advanced Databases	<i>C or better in CSCI 380</i>	3	

## 3. BREADTH REQUIREMENT (9-10 credits)

*Must complete 9-10 credits outside of CSCI 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 Gen Chem II/Lab AND either CHEM 206 Quant. Analysis or CHEM 215 Organic/Biochem
- **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 Inter. Micro Theory or ECON 321 Inter. Macro Theory, and (2) 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.