

B. S. IN COMPUTER SCIENCE

Curriculum Control Sheet

Freshman Requirement (1 Credit)

- Pioneer Success Seminar (1 credit)

UCC Requirements (41 Credits)

Area One – Personal Well-Being (3 credits)

Area Two – Expression (9 credits)

- Arts & Communication (3)
 - COMM 1100 Communication in Action
- Literature (3)
 - ENG 1500 Experiences in Literature*^W
- Writing (3)
 - ENG 1100 College Writing*^W

Area Three – Ways of Knowing (20 credits)

- Philosophical Perspectives (3)
- Historical Perspectives (3)
- Social & Behavioral Sciences (6)
- Scientific Perspectives (4)
Select 1 from the following:
 - BIO 1630 General Biology I – *must take BIO 1640 for Science Requirement as Co-Requisite*
 - CHEM 1600 General Chemistry I – *must take CHEM 1620 for Science Requirement as Co-Requisite*
 - PHYS 2600 General Physics I – *must take PHYS 2610 for Science Requirement as Co-Requisite*
- Quantitative Thinking (4)
 - MATH 1600 Calculus I

Area Four – Diversity & Justice (3 credits)

Area Five – Community & Civic Engagement (3 credits)

Area Six – Global Awareness (3 credits)

University Graduation Requirements (6 Credits)

- FOREIGN LANGUAGE – Basic I (3)
- FOREIGN LANGUAGE – Basic II (3)

Co-Requisites (18-20 Credits)

Math Requirements (8 credits)

- MATH 1610 Calculus II (4)
- MATH 3240 Probability and Statistics (4)

Science Requirement (4 credits)

Select 1 from the following (please see notes under Scientific Perspectives in UCC Area Three):

- BIO 1640 General Biology II (4)
- CHEM 1620 General Chemistry II (4)
- PHYS 2610 General Physics II (4)

Additional Math & Science Requirements (7-8 credits)

Select 2 from the following, at least 1 must be a science course:

- BIO 2050 Cell Biology (4)
- BIO 2060 General Genetics (4)
- CHEM 2110 Intro to Instrumental Methods (4)
- CHEM 2570 Organic Chemistry I (4)
- CHEM 3200 Inorganic Chemistry (4)
- ENV 1100 Environmental Sustainability (4)
- ENV 1150 General Geology (4)
- MATH 2010 Calculus III (4)
- MATH 2020 Linear Algebra (3)
- MATH 3010 Modern Algebra (3)
- MATH 3220 Differential Equations(3)
- MATH 4110 Advanced Discrete Mathematics (3)
- PHYS 2500 Basic Electronics I (4)
- PHYS 2620 General Physics III (4)

Free Electives

Additional credits may be needed to reach the 120 minimum credits to graduate.

COMPUTER SCIENCE MAJOR (48 Credits):

Basic Core Courses (21 credits)

- CS 2300 Computer Science I*^T (4)
- CS 2400 Computer Science II*^T (4)
- CS 2600 Discrete Structures (3)
- CS 2800 Computer and Assembler Language (3)
- CS 3410 Digital Logic & Computer Organization (3)
- CS 3420 Data Structures (4)

Advanced Core Courses (15 credits)

- CS 3380 Networking Fundamentals and Net-Centric Computing (3)
- CS 3450 Operating Systems (3)
- CS 3500 Software Engineering*^T*^W (3)
- CS 3820 Programming Languages (3)
- CS 4800 Computer Science Seminar*^T*^W (3)

Computer Science Electives (12 credits)

Select 4 from the following:

- CS 3990 Selected Topics (1-6)

- CS 4020 Numerical Methods (3)
- CS 4040 Computer Simulation (3)
- CS 4050 Systems Programming (3)
- CS 4100 Artificial Intelligence (3)
- CS 4200 Compiler Construction (3)
- CS 4300 Data Comm. & Computer Networks (3)
- CS 4400 Database Management (3)
- CS 4410 Computer Architecture (3)
- CS 4450 Theory of Computation (3)
- CS 4610 Computer Graphics (3)
- CS 4900 Computer Science Senior Project (3)
- CS 4950 Internship (1-3)
- CS 4990 Independent Study (3-6)

*^T – *Technology Intensive (require 2 courses)*

*^W – *Writing Intensive (require 4 courses)*

SUGGESTED SEQUENCE OF COURSES⁺

⁺ This suggested sequence assumes the student has satisfied the Math pre-requisite requirements (MATH 1150 and MATH 1160, or MATH 1350). If not, a student must see his/her advisor or the Chair of the Computer Science Department for alternative schedule. A student must take either a Math course (depending on the Math Placement Exam) and/or CS 2300 in the first semester of the freshman year.

1st Semester (Freshman Year)		Credits	2nd Semester (Freshman Year)		Credits
<i>CS Major – Core</i>	CS 2300 – Computer Science I	4	<i>CS Major – Core</i>	CS 2400 – Computer Science II	4
<i>UCC Area One (Personal Well-Being)</i>	Any course in Personal Well-Being	3	<i>CS Major – Core</i>	CS 2600 – Discrete Structures	3
<i>UCC Area Two (Arts & Comm.)</i>	COMM 1100 – Communication in Action	3	<i>UCC Area Three (Quantitative Thinking)</i>	MATH 1600 – Calculus I	4
<i>UCC Area Two (Writing)</i>	ENG 1100 – College Writing	3	<i>UCC Area Two (Literature)</i>	ENG 1500 – Experiences in Literature	3
<i>Freshman Seminar</i>	WPU 1010 – Freshman Seminar	1.5			
Credits		14.5	Credits		14
3rd Semester (Sophomore Year)			4th Semester (Sophomore Year)		
<i>CS Major – Core</i>	CS 2800 – Computer and Assembler Language	3	<i>CS Major – Core</i>	CS 3410 – Digital Logic & Computer Organization	3
<i>CS Major – Core</i>	CS 3420 – Data Structures	4	<i>CS Major – Adv. Core</i>	CS 3450 – Operating Systems	3
<i>Co-Requisite – Math</i>	MATH 1610 – Calculus II	4	<i>Co-Requisite – Math</i>	MATH 3240 – Probability and Statistics	4
<i>UCC Area Three (Philosophical)</i>	Any course in Philosophical Perspectives	3	<i>UCC Area Three (Historical)</i>	Any course in Historical Perspectives	3
<i>Univ. Graduation Requirement</i>	Foreign Language I	3	<i>Univ. Graduation Requirement</i>	Foreign Language II	3
Credits		17	Credits		16
5th Semester (Junior Year)			6th Semester (Junior Year)		
<i>CS Major – Adv. Core</i>	CS 3500 – Software Engineering	3	<i>CS Major – Adv. Core</i>	CS 3820 – Programming Languages	3
<i>CS Major – Adv. Core</i>	CS 3380 – Networking Fundamentals and Net-Centric Computing	3	<i>CS Elective</i>	Please see course listing on the first page	3
<i>UCC Area Three (Social & Behavioral)</i>	Any course in Social & Behavioral Sciences (2 different disciplines)	3	<i>Co-Requisite – Science</i>	BIO 1640* or CHEM 1620* or PHYS 2610* (*corresponds to the science sequence in UCC Area Three – Scientific Perspectives)	4
<i>UCC Area Three (Scientific Perspectives)</i>	BIO 1630* or CHEM 1600* or PHYS 2600*	4	<i>UCC Area Three (Social & Behavioral)</i>	Any course in Social & Behavioral Sciences (2 different disciplines)	3
<i>Free Elective</i>	Any course	1-3	<i>UCC Area Four</i>	Any course in Diversity & Justice	3
Credits		14-16	Credits		16
7th Semester (Senior Year)			8th Semester (Senior Year)		
<i>CS Elective</i>	Please see course listing on the first page	3	<i>CS Major – Adv. Core</i>	CS 4800 – Computer Science Seminar	3
<i>CS Elective</i>	Please see course listing on the first page	3	<i>CS Elective</i>	Please see course listing on the first page	3
<i>Co-Requisite – Add. Math & Science</i>	Please see course listing on the first page	3-4	<i>Co-Requisite – Add. Math & Science</i>	Please see course listing on the first page	3-4
<i>UCC Area Five</i>	Any course in Community & Civic Engagement	3	<i>UCC Area Six</i>	Any course in Global Awareness	3
<i>Free Elective</i>	Any course	1-3	<i>Free Elective</i>	Any course	1-3
Credits		13-16	Credits		13-16