

Cleveland State University  
Monte Ahuja College of Business  
Bachelor of Science  
Computer Information Science  
Recommended Sequence

**First Year**

Fall Semester	Credits	Major	Gen Ed	Spring Semester	Credits	Major	Gen Ed
ENG 101 English I	3		W/C	ENG 102 English II	3		W/C
MTH 181 Calculus I	4		M/QL	MTH 182 Calculus II	4		M/QL
CIS 151 Invitation to Computing	4	X		CIS 260 Introduction to Programming	4	X	
African-American Experience elective **	3		DIV	Arts and Humanities Non- U.S. Society elective **	4		A&H
BUS 101 Introduction to University Life	1		INTRO				
<i>Semester Total</i>	15			<i>Semester Total</i>	15		

**Second Year**

Fall Semester	Credits	Major	Gen Ed	Spring Semester	Credits	Major	Gen Ed
PHY 243 University Physics I (W)***	5	X	NS WAC	PHY 244 University Physics II (W)***	5	X	NS WAC
Arts and Humanities elective**	3		A&H	Concentration Elective	3	X	
CIS 265 Data Structures and Algorithms	4	X		CIS 335 Language Processors	3	X	
Social Science (Non U.S) **	3		SS	CIS 340 C/C++ for Systems Programming	4	X	
				MTH 284 Matrices for Engineers+	2	X	
<i>Semester Total</i>	15			<i>Semester Total</i>	17		

**Third Year**

Fall Semester	Credits	Major	Gen Ed	Spring Semester	Credits	Major	Gen Ed
MTH 220 Intro to Discrete Mathematics	4	X		MTH 323 Statistical Methods+	4	X	
CIS 345 Operating System Principles	4	X		IST 420 Project Management	4	X	
CIS 368 Object Oriented Design & Programming	4	X		CIS Elective	4	X	
Concentration Elective	3	X		CIS Elective	4	X	
<i>Semester Total</i>	15			<i>Semester Total</i>	16		

**Fourth Year**

Fall Semester	Credits	Major	Gen Ed	Spring Semester	Credits	Major	Gen Ed
CIS Elective	4	X		CIS 485 Senior Project (Capstone)	4	X	CAP
CIS Elective	4	X		CIS Elective	4	X	
Concentration Elective	3	X		Concentration Elective	4	X	
Concentration Elective	3	X		Writing (WAC) Elective**	3		WAC
Social Science elective**	3		SS	U.S. Diversity elective**	3		DIV
<b>Apply for Spring graduation prior to Sep 9th</b>							
<i>Semester Total</i>	17			<i>Semester Total</i>	18		

**Degree Total: 128 hours**

Assumptions: college-level readiness in MTH & ENG; no Foreign Language Deficiency

**College/ Program Notes:**

The plan above is a suggested guide to ensure that all General Education, College, University, and Major requirements are met within 4 years of study. Students may deviate from the suggested placement of Gen Ed courses, although the M/QL and W/C requirements should be completed during the first year of study.

\*\* Before choosing electives, students should consult an advisor.

\*\*\* PHY 243 and 244 can be substituted by PHY 221 and PHY 222 for those not taking the Calculus sequence.

+ MTH 284 and MTH 323 can be substituted by OMS 201 and OMS 202.

CIS majors are required to complete 128 hours of course work that includes university, college and major requirements. Adhering to the recommended sequence outlined below provides a balanced workload and ensures that students will have the proper prerequisites and knowledge for maximum benefit of these courses. At least 46 hours must be earned in courses taught at the 300 level or above. All Computer and Information Science courses must be passed with a grade of C or better.

**Cleveland State University**  
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**Bachelor of Science**  
**Computer Information Science**  
**Recommended Sequence**

\*General Electives ensure that a student accumulates the minimum credit hour totals needed for graduation. Students must have a **minimum of 128 total credit hours**, of which a **minimum of 42 credit hours** must be upper division (300 or 400-level courses). Depending upon other elective choices made, students may not need as many general electives as indicated above, or may need additional electives.

**University Notes:**

<b>Gen Ed Key:</b>	SS = Social Sciences Requirement (2 courses, one of which must be focused outside the US**)
INTRO = Introduction to University Life Requirement (one course)	A&H = Arts & Humanities Requirement (2 courses, one must be focused outside the US**)
W/C = Writing/Composition Requirement (two courses; C or better required)	DIV = Social Diversity Requirement (2 courses; one US Diversity and one African American Exp.)
M/QL = Mathematics/Quantitative Literacy Requirement (two courses)	WAC/SPAC = Writing/Speaking Across the Curriculum Requirement (3 courses, one in the major)
NS = Natural Sciences (two courses, one of which must have a lab)	CAP = Capstone Requirement
** of the SS and A&H courses focused outside the US, one must be focused on Africa, Latin America, Asia or the Middle East (ALAAME)	

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MTH 181 Calculus I	4		M/QL	MTH 182 Calculus II	4		M/QL
CIS 151 Invitation to Computing	4	X		CIS 260 Introduction to Programming	4	X	
Social Science elective **	3		SS	African-American Experience elective **	3		DIV
BUS 101 Introduction to University Life	1		INTRO	Arts and Humanities elective **	3	X	A&H
<i>Semester Total</i>				<i>Semester Total</i>			
15				17			

**Second Year**

Fall Semester				Spring Semester			
	Credits	Major	Gen Ed		Credits	Major	Gen Ed
CIS 265 Data Structures and Algorithms	4	X		CIS 335 Language Processors	4	X	
MTH 284 Matrices for Engineers	2	X		CIS 340 C/C++ for Systems Programming	2	X	
PHY 243 University Physics I (W)	5	X	WAC	PHY 244 University Physics II (W)	5	X	WAC
Social Science (Non U.S) **	3		SS	U.S. Diversity elective **	3		DIV
Natural Science / Quantitative Elective **	3		NS	Natural Science / Quantitative Elective **	3		NS
<i>Semester Total</i>				<i>Semester Total</i>			
17				17			

**Third Year**

Fall Semester				Spring Semester			
	Credits	Major	Gen Ed		Credits	Major	Gen Ed
MTH 220 Intro to Discrete Mathematics	4	X		MTH 323 Statistical Methods	4	X	
CIS 345 Operating System Principles	4	X		MTH 311 Numerical Methods	4	X	
CIS 368 Object Oriented Design & Programming	4	X		CIS 424 Comparative Programming Languages	4	X	
IST 420 Project Management	4	X		CIS Elective †	4	X	
<i>Semester Total</i>				<i>Semester Total</i>			
16				17			

**Fourth Year**

Fall Semester				Spring Semester			
	Credits	Major	Gen Ed		Credits	Major	Gen Ed
CIS 480 Intro to Computer Architecture	4	X		CIS 485 Senior Project (Capstone)	4	X	CAP
CIS 490 Foundations of Computing	3	X		CIS Elective †	4	X	
CIS Elective †	4	X		CIS Elective †	4	X	
Writing (WAC) Elective**	3		WAC A&H	CIS Elective †	4	X	
<i>Semester Total</i>				<i>Semester Total</i>			
14				16			

**Degree Total: 128 hours**

Assumptions: college-level readiness in MTH & ENG; no Foreign Language Deficiency

**College/ Program Notes:**

The plan above is a suggested guide to ensure that all General Education, College, University, and Major requirements are met within 4 years of study. Students may deviate from the suggested placement of Gen Ed courses, although the M/QL and W/C requirements should be completed during the first year of study.

\*\* Before choosing electives, students should consult an advisor.

† Students should consult with a CIS faculty advisor before selecting concentration or CIS electives.

CS majors are required to complete 128 hours of course work that includes university, college and major requirements. Adhering to the recommended sequence outlined below provides a balanced workload and ensures that students will have the proper prerequisites and knowledge for maximum benefit of these courses.

All computer and information science courses must be passed with a grade of "C" or higher.

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