

Computer Science

University Requirements (20)

Writing – American Thought and Language (ATL)	4
Integrative Studies in Humanities (IAH)	8
Integrative Studies in Social Sciences (ISS)	8

Bioscience (4-6)

Select one course from Group A and one course from Group B. *A selection of BS 110 satisfies both Group A and Group B.*

Group A

BS 110	Organisms & Populations	4
BS 111	Cells & Molecules	3
ENT 205	Pests, Society & Environment	3
MMG 205	Allied Health Microbiology	3
PLB 105	Plant Biology	3
PSL 250	Introductory Physiology	4
ZOL 141	Introductory Human Genetics	3

Group B

BS 110	Organisms & Populations	4
BS 111L	Cells & Molecular Biology Lab	2
CEM 161	Chemistry Lab I	1
CEM 162	Chemistry Lab II	1
MMG 206	Allied Health Microbiology Lab	1
PHY 191	Physics Lab for Scientists I	1
PHY 192	Physics Lab for Scientists II	1
PLB 106	Plant Biology Lab	1

College Requirements (26)

CSE 231	Introduction to Programming I	4
MTH 132	Calculus I	3
MTH 133	Calculus II	4
MTH 234	Multivariable Calculus	4
MTH 235	Differential Equations	

OR

MTH 314	Matrix Algebra with Applications	3
¹ PHY 183	Physics for Scientists & Engineers I	4
¹ PHY 184	Physics for Scientists & Engineers II	4

Major Requirements (41-43)

CSE 232	Introduction to Programming II	4
CSE 260	Discrete Structures in Computer Science	4
CSE 320	Computer Organization	3
CSE 331	Algorithms & Data Structures	3
CSE 335	Object – Oriented Software Design	3
CSE 410	Operating Systems	3
CSE 498	Collaborative Design	4
STT 351	Probability and Statistics for Engineering	3

Select five of the following courses:

CSE 420	Computer Architecture	3
CSE 422	Computer Networks	3
CSE 435	Software Engineering	3

CSE 440	Artificial Intelligence & Symbolic Prog.	3
CSE 450	Translation of Programming Languages	3
CSE 452	Organization of Programming Languages	3
CSE 460	Computability & Formal Language Theory	3
CSE 471	Media Processing & Multimedia Computing	3
CSE 472	Computer Graphics	3
CSE 480	Database Systems	3
MTH 416	Introduction to Algebraic Coding	3
MTH 451	Numerical Analysis I	3
MTH 481	Discrete Mathematics I	3

Required Cognate (15)

A minimum of four courses outside of the College of Engineering totaling fifteen or more credits.

Option A: At least 6 of the 15 credits must be in courses numbered at 300-400 level.

Option B: A four-course sequence in a foreign language.

Option C: The Eli Broad College of Business Complete all of the following courses:

ACC 230	Survey of Accounting Concepts	3
EC 210	Econ Principles Using Calculus	3
FI 320	Introduction to Finance	3
GBL 323	Introduction to Business Law	3
MSC 327	Introduction to Marketing	3

The academic advisor of the Department of Computer Science & Engineering must approve both the cognate and the related courses. The cognate should enhance the student's ability to apply analytic procedures in a specific subject area.

Other Electives (Variable)

Total Credits Required for Degree 120

The requirements listed above apply to students admitted to the major of Computer Science in the Department of Computer Science and Engineering beginning Fall, 2004. The Department of Computer Science and Engineering (CSE) constantly reviews program requirements and reserves the right to make changes as necessary. Consequently, each student is strongly encouraged to consult with his/her advisor to obtain assistance in planning an appropriate schedule of courses. Students who have questions about Computer Science should contact the Computer Science and Engineering Department Advising Office, 3115 Engineering Building, phone (517) 353-3148.

Some courses may have prerequisites, which are not otherwise required in the program. Students should check course descriptions to ensure they are aware of prerequisites.

¹ If PHY 231 is taken in place of PHY 183, PHY 233B must also be completed. If PHY 232 is taken in place of PHY 184, PHY 234B must also be completed.

Computer Science Sample Program

Freshman Year				Sophomore Year			
Fall	Credits	Spring	Credits	Fall	Credits	Spring	Credits
Bioscience (AT)	4	ATL 1XX	4	IAH 20X	4	CSE 320	3
CSE 231	4	CSE 232	4	CSE 260	4	CSE 331	3
ISS 2XX	4	MTH 133	4	MTH 234	4	MTH 235/314	3
MTH 132	3	Elec/Cog.	3	PHY 183	4	Elec/Cog.	3
						Elec/Cog	3
Total	14	Total	16	Total	16	Total	15

Junior Year				Senior Year			
Fall	Credits	Spring	Credits	Fall	Credits	Spring	Credits
		Cognate	3	Elec/Cog	3	CSE 4XX	3
CSE 335	3	CSE 4XX	3	CSE 4XX	3	CSE 498	4
CSE 410	3	CSE 4XX	3	CSE 4XX	3	Elec/Cog	3
IAH 2XX	4	ISS 3XX	4	Elec/Cog	3	Elec/Cog	3
PHY 184	4	STT 351	3	Elec/Cog	3	Elective	1
Total	14	Total	16	Total	15	Total	14