

# BACHELOR OF SCIENCE DEGREE

## COMPUTER SCIENCE

### COORDINATE MAJOR

**NOTE: Students must meet admissions criteria to take courses in this curriculum. FOR ADDITIONAL INFORMATION: CONTACT THE COMPUTER SCIENCE AND ENGINEERING ADVISING OFFICE**

#### (1) UNIVERSITY REQUIREMENTS

##### Writing Requirement

Tier I: LB 133 4  
 Tier II: Satisfied by completing the Lyman Briggs College History, Philosophy and Sociology of Science and Senior requirements listed below.

##### Integrative Studies in Arts & Humanities (IAH)

IAH 201-210\* 4  
 IAH 211-241\*†# 4

##### Integrative Studies in Social, Behavioral & Economic Sciences (ISS)

ISS 200-level course\* 4  
 ISS 300-level course\*‡@ 4

\*National, International, & Multicultural Diversity  
 Students must include at least one "N" course and one "I" course in their Integrative Studies programs. A "D" course may meet either an "N" or an "I" requirement, but not both.

†Summer 2013 to Summer 2017: LB 331, 333, and 336 will fulfill the IAH "B" university requirement (IAH 211 or higher). Please consult your LBC Academic Advisor for specific details for your program.

‡Summer 2013 to Summer 2017; LB 332, 334, and 335 will fulfill the ISS 300-level university requirement. Please consult your LBC Academic Advisor for specific details for your program.

# Beginning Fall 2017; LB 321a, 322a, 323a, 324a, 325a, 326a and 327a will fulfill the IAH university requirement (IAH 211 or higher).

@ Beginning Fall 2017; LB 321b, 322b, 323b, 324b, 325b, 326b and 327b will fulfill the ISS 300-level university requirement.

Please contact your LBC Academic Advisor for specific details for your program. If you fulfilled the LB 331, 332, 333, 334, 335 or 336 requirement you do not need the new Fall 2017 courses.

##### Mathematics, Biological and Physical Sciences

Satisfied by the Lyman Briggs College requirements in Mathematics, Biological and Physical Sciences (see next section).

#### (2) LYMAN BRIGGS COLLEGE REQUIREMENTS

##### Biological Sciences (9 cr.)

Complete ONE of the following groups of courses  
 (1) LB 144 & 145 9  
 (2) BS 161, 162, 171, & 172 10

##### Chemistry (8-9 cr.)

Complete ONE of the following groups of courses  
 (1) LB 171, 171L, 172, & 172L 9  
 (2) CEM 141, 142, & 161 8  
 (3) CEM 151, 152, & 161 8

##### Physics (8 cr.)

Complete ONE of the following groups of courses  
 (1) LB 273, 274\* 8  
 (2) PHY 183 & 184\* 8

##### Mathematics (6-7 cr.)

Complete ONE of the following groups of courses  
 (1) LB 118 & 119\* 8  
 (2) MTH 132 & 133\* 7

##### History, Philosophy & Sociology of Science (11-12 cr.)

LB 133 4  
 LB 321-326, 330-336, 355, 490E; ENG 473A; HST 425; SOC 368 7-8

##### Senior Seminar (4 cr.)

LB 492 4

\*Physics and Mathematics courses also meet graduation requirements for major

Minimum number of credits required: 120

Minimum cumulative and major grade point average: 2.0

### (3) MAJOR REQUIREMENTS

Complete ALL of the following courses (33 cr.)		
CSE 100	Computer Science as a Profession	1
CSE 231	Introduction to Programming I	4
CSE 232	Introduction to Programming II	4
CSE 260	Discrete Structures in Computer Science	4
CSE 320	Computer Organization & Architecture	3
CSE 331	Algorithms & Data Structures	3
CSE 335	Object Oriented Software Design	4
CSE 410	Operating Systems	3
CSE 498	Collaborative Design (W)	4
STT 351	Probability & Statistics for Engineering	3

Complete a minimum of FIVE of the following courses (15 cr.)		
CSE 420	Computer Architecture	3
CSE 422	Computer Networks	3
CSE 425	Introduction to Computer Security	3
CSE 435	Object Oriented Software Design	3
CSE 440	Introduction to Artificial Intelligence	3
CSE 450	Translation of Programming Languages	3
CSE 460	Computability & Formal Language Theory	3
CSE 471	Media Processing & Multimedia Computing	3
CSE 472	Computer Graphics	3
CSE 473	Fundamentals of 3D Game Development	3
CSE 476	Mobile Application Development	3
CSE 477	Web Application Architecture and Development	3
CSE 480	Database Systems	3
CSE 484	Information Retrieval	3
CSE 491	Selected Topics in Computer Science	1-4
MTH 451	Numerical Analysis	3

#### Required Cognate (15 cr.)

Cognates in the following areas are available to students in Computer Science: business, communication arts and sciences, foreign language, mathematics, the natural sciences, philosophy, psychology, the social sciences, and telecommunication. Students may complete cognates in other areas with the approval of the Department of Computer Science and Engineering academic advisor. The cognate should enhance the student's ability to apply analytical procedures in a specific subject area.

The cognate requires a minimum of four courses totaling 15 or more credits outside the College of Engineering selected from (1) or (2) below. The academic advisor of the Department of Computer Science and Engineering must pre approve both the cognate and the cognate courses.

(1) At least 6 of the 15 credits must be in courses at the 300-400 level. The cognate in The Eli Broad College of Business requires a specific set of courses: ACC 230, EC 210, FI 320, GBL 323, and MKT 327.

(2) A sequence of at least four courses in a foreign language.

### (4) ADDITIONAL REQUIREMENTS FOR DEGREE

EGR 100	2
MTH 234	4

**IMPORTANT: This advising guide is presented for planning purposes only. It is the student's responsibility for knowing and following University, college and departmental requirements as stated in the [Academic Programs Catalog](#).**

**The Academic Advisors will provide information and suggest others based on expressed interests. It is the student's responsibility for enrolling in classes and selecting the number of credits per semester for success. Appointments are made using the [Student Success Dashboard](#).**

