

BACHELOR OF SCIENCE DEGREE

CHEMICAL PHYSICS

COORDINATE MAJOR

FOR ADDITIONAL INFORMATION, PLEASE CONTACT THE DEPARTMENT OF CHEMISTRY 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 151, 152, 161, & 162 9

Physics (8 cr.)

Complete ONE of the following groups of courses
 (1) LB 273, 274* 8
 (2) PHY 183, 184, 191 & 192* 10

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 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 (34 cr.)

CEM	251	Organic Chemistry I	3*
CEM	252	Organic Chemistry II	3*
CEM	262	Quantitative Analysis	3
CEM	411	Inorganic Chemistry	4
CEM	499	Chemical Physics Seminar	2
LB	220	Calculus III	4†
MTH	235	Differential Equations	3
PHY	215	Thermodynamics & Modern Physics	3
PHY	321	Classical Mechanics I	3
PHY	471	Quantum Physics I	3
PHY	481	Electricity and Magnetism I	3

*CEM 351 and 352 can be substituted for CEM 251 and 252

†MTH 234 can be substituted for LB 220

Choose ONE of the following groups (4 -7 cr.)

Group A

MTH	299	Transitions	4
MTH	309	Linear Algebra I	3

Group B

MTH	299	Transitions	4
MTH	314	Matrix Algebra with Applications	3

Group C

MTH	317H	Honors Linear Algebra	4
-----	------	-----------------------	---

Complete one of the following courses (3 cr.)

MTH	310	Abstract Algebra I and Number Theory	3
MTH	320	Analysis I	3
MTH	415	Applied Linear Algebra	3
MTH	418H	Honors Algebra I	3
MTH	428H	Honors Complex Analysis	3
MTH	441	Ordinary Differential Equations II	3
MTH	442	Partial Differential Equations	3
MTH	443	Boundary Value Problems for Engineers	3
MTH	451	Numerical Analysis I	3

Complete one of the following courses (3-4 cr.)

PHY	410	Thermal and Statistical Physics	3
PHY	415	Methods of Theoretical Physics	3
PHY	422	Classical Mechanics II	3
PHY	431	Optics I	3
PHY	472	Quantum Physics II	3
PHY	480	Computational Physics	3
PHY	482	Electricity and Magnetism II	3
PHY	491	Atomic, Molecular and Condensed Matter Physics	3
PHY	492	Nuclear and Elementary Particle Physics	3

Choose ONE of the following (3 cr.)

CEM	333	Instrumental Methods	3
CEM	395	Analytical/Physical Chemistry Lab	2
CEM	495	Molecular Spectroscopy	2

Choose both of the following courses (6 cr.)

CEM	483	Quantum Chemistry	3
CEM	484	Molecular Thermodynamics	3

Complete the capstone (2 cr.)

Chemistry 499 fulfill the department capstone requirement. Students must have two enrollments for 1 credit each.

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](#).