MICHIGAN STATE UNIVERSITY | Lyman Briggs College

BACHELOR OF SCIENCE DEGREE
CHEMICAL PHYSICS
COORDINATE MAJOR
FOR ADDITIONAL INFORMATION, PLEASE CONTACT THE DEPARTMENT OF CHEMISTRY

(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.

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

‡Beginning Summer 2013, LB 332, 334, and 335 will fulfill the ISS 300-level university requirement. Please consult your LBC advisor for specific details for your program.

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

Minimum number of credits required: 120

Minimum cumulative and major grade point average: 2.0

(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

(3) MAJOR REQUIREMENTS

IMPORTANT: These guidelines are presented for planning purposes only. Students MUST consult a department advisor for confirmation of 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 following capstone (2 cr.)

The completion of Chemistry 499 fulfills the department's capstone requirement. Two enrollments in Chemistry 499 are required, 1 credit per enrollment.