BACHELOR OF SCIENCE DEGREE
PHYSICS

(1) UNIVERSITY REQUIREMENTS

Writing Requirement

English/Writing (WRA):

Four semester credits equivalent to MSU’s Writing, Rhetoric and American Cultures course
Writing: Science and Technology (WRA 110)

Integrative Studies

ISS
ISS 200-level course (4 credits)
ISS 300-level course (4 credits)

IAH
IAH 201-210 (4 credits)
IAH 211-241 (4 credits)

Mathematics

Four semester credits equivalent to one of the following MSU courses: MTH 110, MTH 116, MTH 124, MTH 132

Minimum number of credits required: 120
Minimum cumulative and major GPA: 2.0

(2) COLLEGE OF NATURAL SCIENCE REQUIREMENTS

Biological Science

Complete one of the following courses:
BS 161, BS 162, ENT 205, PSL 250, MMG 205, PLB 105, ZOL 141 or MMG 141

Chemistry

Complete one sequence from the following:
CEM 141, CEM 142, CEM 161
CEM 151, CEM 152, CEM 161
CEM 181H, CEM 182H, CEM 185H

Mathematics

MTH 132 (Calculus 1)*
MTH 133 (Calculus 2)*

Physics

PHY 183 (Physics for Scientists & Engineers –1)*
PHY 184 (Physics for Scientists & Engineers –2)*
-OR-
PHY 193H (Honors Physics-1 Mechanics)*
PHY 294H (Honors Physics-2 Electromagnetism)*

*Physics and Mathematics courses also meet graduation requirements for major.
(3) MAJOR REQUIREMENTS

Complete all of the following physics courses:

PHY 191 (Physics Laboratory for Scientists -1)
PHY 192 (Physics Laboratory for Scientists –2)
PHY 215 (Thermodynamics and Modern Physics)
PHY 321 (Classical Mechanics -1)
PHY 410 (Thermal and Statistical Physics)
PHY 431 (Optics) -or- PHY 440 (Electronics)
PHY 451 (Advanced Laboratory)
PHY 471 (Quantum Physics -1)
PHY 481 (Electricity and Magnetism -1)

Complete all of the following mathematics courses:

MTH 234 (Multivariable Calculus)
MTH 235 (Differential Equations)
MTH 3XX (Math course 300-level or higher)*
MTH 3XX (Math course 300-level or higher)*
PHY 415 (Methods of Theoretical Physics) is a valid substitution for 1 300-level math course

Complete one sequence for Tier II requirement:

Sequence 1:
PHY 491 (Intro to Condensed Matter Physics)
PHY 492 (Intro to Nuclear Physics)
PHY 493 (Intro to Elementary Particle Physics)

Sequence 2:
PHY 431 (Optics 1)
PHY 440 (Electronics)
PHY 451 (Advanced Laboratory)

Complete one sequence for Capstone requirement:

Sequence 1:
PHY 491 (Intro to Condensed Matter Physics)
PHY 492 (Intro to Nuclear Physics)
PHY 493 (Intro to Elementary Particle Physics)

Sequence 2
PHY 490 (2 semesters – Senior Thesis)

IMPORTANT: These guidelines are presented for planning purposes only. Students MUST consult a department advisor for confirmation of major requirements.

To make an appointment with the academic advisor please follow the instructions at http://www.pa.msu.edu/academics/undergraduate-program/academic-advising

For additional information, please contact: Jennifer Millar (millar@pa.msu.edu or 517-884-5532)