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.
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)

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 Roberts (millar@pa.msu.edu or 517-884-5532)

Complete all of the following mathematics courses:

MTH 234 (Multivariable Calculus)
MTH 235 (Differential Equations)
MTH 3XX (Math course 300-level or higher)*
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* 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: Two of the following
PHY 491 (Intro to Condensed Matter Physics)
PHY 492 (Intro to Nuclear Physics)
PHY 493 (Intro to Elementary Particle Physics)

Sequence 2: All of the following
PHY 431 (Optics 1)
PHY 440 (Electronics)
PHY 451 (Advanced Laboratory)

Complete one sequence for Capstone requirement:

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

Sequence 2:
PHY 490 (4 credits – Senior Thesis; may be split over two semesters)