

**COLLEGE OF SCIENCE & MATHEMATICS
ACCELERATED UNDERGRADUATE TO GRADUATE PROGRAM**

MAJOR: PHYSICS – Standard

ACADEMIC YEAR: 2014-2015

DEGREE TYPE: B.A. or B.S. and M.S.

REQUIRED DEGREE CREDITS TO GRADUATE: B.A. or B.S. 122 min. credits and an additional 30 graduate credits for the M.S.

GENERAL EDUCATION REQUIREMENTS – 40 CREDITS

Lower Division Requirements – 37 Upper Division Requirements – 3

First Year Experience (F) - 1 Credit

UNIV	189	Skills for Academic Success	1
Students transferring in 24 or more credits do not need to take UNIV 189.			

Communication (C) - 12 Credits (9 Lower Division; 3 Upper Division)

COMM	110	Fund of Public Speaking	3
ENGL	110	College Composition I	3
ENGL	120	College Composition II	3
ENGL		Upper Division	3
Select from current general education courses www.ndsu.edu/registrar/gened/			

Quantitative Reasoning (R) - 3 Credits

MATH	165	Calculus I	4
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Science & Technology (S) - 10 Credits

PHYS	251/L	University Physics I/Lab	4/1
PHYS	252/L	University Physics II/Lab	4/1

Humanities & Fine Arts (A) - 6 Credits

Select from current general education courses www.ndsu.edu/registrar/gened/

Social & Behavioral Sciences (B) - 6 Credits

Select from current general education courses www.ndsu.edu/registrar/gened/

Wellness (W) - 2 Credits

Select from current general education courses www.ndsu.edu/registrar/gened/

Cultural Diversity (D)

Select from current general education courses www.ndsu.edu/registrar/gened/

Global Perspectives (G)

Select from current general education courses www.ndsu.edu/registrar/gened/

DEGREE NOTES:

- Except for courses offered only as pass/fail grading, no course may be taken Pass/Fail.

Accelerated Program Notes and Application Guidelines

- Completion of a minimum of 60 credits (30 earned at NDSU) and a cumulative GPA of 3.5
- Up to 15 credits of graduate 600 level courses may count toward the bachelor's degree.

PHYSICS STANDARD MAJOR REQUIREMENTS – 40-42 CREDITS

- A grade of 'C' or better is required for all PHYS and AST prefix courses

PHYS	171	Introductory Projects in Physics	1
PHYS	251R	Univ. Physics I Recitation	1
PHYS	252R	Univ. Physics II Recitation	1
PHYS	350	Modern Physics	3
PHYS	360	Modern Physics II	3
PHYS	361or	Electromagnetic Theory	3 or 4
	370	Electromagnetic Theory (MSUM)	
PHYS	370	Introduction to Computational Physics	3
PHYS	411&L/611&L	Optics for Scientists & Engineers/Lab	3/1
PHYS	455/655 or	Classical Mechanics	3 or 4
	330	Intermediate Mechanics (MSUM)	
PHYS	462/662	Heat & Thermodynamics	3
PHYS	485/685	Quantum Mechanics I	3
PHYS	486/686	Quantum Mechanics II	3
PHYS	489	Sr. Project/Capstone	3

Physics Electives – 6 Credits – Select two courses from the following list (or with departmental permission a student may take MSUM astrology courses):

PHYS	215	Research for Undergraduates	3
PHYS	413/613	Lasers for Scientists & Engineers	3
PHYS	415/615	Elements of Photonics	3
PHYS	463/663	Statistical Mechanics	3
PHYS	481/681	Intro to Solid State Physics	3

RELATED REQUIRED COURSES – 34-36 CREDITS

Math – 19-20 Credits

MATH	129 or	Basic Linear Algebra	2 or 3
	429	Linear Algebra	
MATH	166	Calculus II	4
MATH	265	Calculus III	4
MATH	266	Intro to Differential Equations	3
MATH	Electives	400 Level (488 & 489 are recommended)	6

Chemistry – 8 Credits (CHEM 150/151 sequence is recommended)

CHEM	150/160 or	Principles of Chemistry I/Lab	3/1
	121/L	General Chemistry I/Lab	
CHEM	151/161 or	Principles of Chemistry II/Lab	3/1
	122/L	General Chemistry II/Lab	

Computer Science – 7-8 Credits

CSCI	160 or	Computer Science I	4 or 3
ECE	173	Introduction to Computing	
CSCI	161	Computer Science II	4

DEGREE REQUIREMENTS – UP TO 1 CREDIT TO REACH 122

COLLEGE REQUIREMENTS – 6 OR 12 CREDITS

Bachelor of Science (BS) Degree – An additional 6 credits in Humanities or Social Sciences*

Bachelor of Arts (BA) Degree – An additional 12 credits Humanities and Social Sciences* and proficiency at the second year level in a modern foreign language.

*Humanities and Social Sciences may be fulfilled by any course having the following prefix: ADHM, ANTH, ARCH, ART, CJ, CLAS, COMM, ECON, ENGL, FREN, GEOG, GERM, HDFS, HIST, LA, LANG, MUSC, PHIL, POLS, PSYC, RELS, SOC, SPAN, THEA, WGS, or any course from the approved list of general education courses in humanities and social sciences (general education categories A and B). These credits must come from outside the department of the student's major.