

Name: \_\_\_\_\_

ID: \_\_\_\_\_

NORTH DAKOTA STATE UNIVERSITY  
College of Science and Mathematics

Physics Major  
Optical Science and Engineering Option

**Major Courses:**

PHYS 251 4 \_\_\_\_\_ University Physics I  
251L 1 \_\_\_\_\_ University Physics I Lab  
252 4 \_\_\_\_\_ University Physics II  
252L 1 \_\_\_\_\_ University Physics II Lab  
299 1 \_\_\_\_\_ University Physics Recitation  
350 3 \_\_\_\_\_ Introduction to Modern Physics  
361 4 \_\_\_\_\_ Electromagnetic Theory  
399 3 \_\_\_\_\_ Intro to Computational Physics  
401 3 \_\_\_\_\_ Fundamental Properties of Solids  
411 3 \_\_\_\_\_ Optics for Scientists and Engineers  
411L 1 \_\_\_\_\_ Optics for Scientists & Engineers Lab  
413 2 \_\_\_\_\_ Lasers for Scientists & Engineers  
415 3 \_\_\_\_\_ Elements of Photonics  
462 3 \_\_\_\_\_ Heat & Thermodynamics  
471 2 \_\_\_\_\_ Advanced Laboratory  
485 3 \_\_\_\_\_ Quantum Mechanics I  
489 3 \_\_\_\_\_ Senior Project/Capstone

ECE 173 3 \_\_\_\_\_ Introduction to Computing  
{EE} 206 4 \_\_\_\_\_ Circuit Analysis I  
321 3 \_\_\_\_\_ Electronics I

**Recommended Additional Courses:**

ECE 417 3 \_\_\_\_\_ Optical Signal Transmission  
483 3 \_\_\_\_\_ Instrumentation for Engineers  
499 3 \_\_\_\_\_ Imaging

**Related Courses Required:**

MATH 165 4 \_\_\_\_\_ Calculus I  
166 4 \_\_\_\_\_ Calculus II  
265 4 \_\_\_\_\_ Calculus III  
266 3 \_\_\_\_\_ Intro to Differential Equations

Choose two Math courses numbered 400 or higher:  
MATH 488 and 489 are recommended

MATH \_\_\_\_\_  
\_\_\_\_\_

CHEMISTRY: 6 credits  
(excluding CHEM 117 & 117L)

CHEM \_\_\_\_\_  
\_\_\_\_\_

Additional credits in Humanities or Social Sciences to  
meet the requirements of the College of Science and  
Mathematics. BS: 6 credits BA: 12 credits

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A grade of C or better is required in all Physics courses.

To complete a degree, the general education requirements of the College of Science and Mathematics and NDSU need to be met along with this major.