

# BACHELOR OF SCIENCE IN OPTICAL ENGINEERING

The Optical Engineering program was established in fall 2003 for the purpose of addressing diversity and high-tech workforce needs in Hampton Roads, the Commonwealth of Virginia, and the United States. The curriculum offers emphasis in optical materials, photonics, optoelectronics, and optical communications.

## Summary of Graduation Requirements

Subject Area	Credits
General Education Core ( <a href="https://catalog.nsu.edu/undergraduate/academic-information/general-education-core-program/">https://catalog.nsu.edu/undergraduate/academic-information/general-education-core-program/</a> )	40
Major Engineering Requirements	54
Mathematics and Science	34
<b>Total Credit Hours</b>	<b>128</b>

## Curriculum

Course	Title	Credits
<b>First Year</b>		
EEN 100	Introduction to Engineering	3
EEN 102	Eng Use Computers	3
ENG 101	College English I	3
ENG 102	College English II	3
MTH 184	Calculus I	4
XXX XXX	Social Science (Tier)	3
PED 100	Fundamentals of Fitness for Life	1
CHM 210	General Chemistry for Engineers	3
EEN 211	Material Science & Engineering, Material Science	3
EEN 101	Engineering Problem Solving	2
SEM 101 & SEM 102	Spartan Seminar 101 and Spartan Seminar 102	2
<b>Credits</b>		<b>30</b>
<b>Second Year</b>		
PHY 160	University Physics I	4
PHY 160L	University Physics Laboratory I	1
PHY 161	University Physics II	4
PHY 161L	University Physics Laboratory II	1
MTH 251	Calculus II	4
MTH 252	Calculus III	4
OEN 200	Geometric & Instr Optics	3
OEN 200L	Geometric & Instr Optics Lab	1
OEN 290	Optical Engineering Seminar I	1
XXX XXX	Humanities (Tier)	3
XXX XXX	Cultural Social Science (Tier)	3
ENG 285	Public Speaking	3
HED 100	Personal and Community Health	2
SEM 201	Spartan Seminar 201	1
<b>Credits</b>		<b>35</b>

## Third Year

OEN 201	Physical and Instrumental Optics	3
OEN 201L	Physical and Instrumental Optics Lab	1
MTH 300	Linear Algebra	3
MTH 372	Differential Equations	3
OEN 320	Optical Systems Analysis	3
OEN 340	Lasers and Photonics	3
OEN 340L	Laser and Photonics Lab	1
OEN 360	Introduction to Optical Materials	3
EEE 201	Electrical Network Theory I	3
EEE 201L	Electrical Network Theory I	1
EEN 311	Engineering Economics	3
OEN 390	Optical Engineering Seminar II	1
EEE 203	Electronic Principles	3
XXX XXX	Cultural Humanities	3
<b>Credits</b>		<b>34</b>

## Fourth Year

MTH 351	Probability & Statistics I	3
OEN 380	Introduction to Quantum Optics	3
OEN 460	Optical Communications I	3
OEN 460L	Optical Communication I Laboratory	1
EEN 321	Electromagnetic Field Theory	3
OEN 490	Senior Seminar	1
OEN 498	Senior Project I	3
OEN 499	Senior Project II	3
XXX XXX	Engineering Restrictive Elective	3
XXX XXX	Technical Elective	3
XXX XXX	Engineering Restrictive Elective	3
<b>Credits</b>		<b>29</b>
<b>Total Credits</b>		<b>128</b>

*The Technical Elective may be chosen from the 300 level or above courses in math, computer science, chemistry, physics or engineering.*