

BACHELOR OF SCIENCE IN PHYSICS AND MASTER OF SCIENCE IN MATERIALS SCIENCE (FIVE-YEAR DUAL DEGREE)

Summary of Graduation Requirements

Subject Area	Credits
General Education Core (https://catalog.nsu.edu/undergraduate/academic-information/general-education-core-program/)	40
Major Requirements	70
Electives	10
Other Requirements	41
Total Credit Hours	161

Curriculum

Course	Title	Credits
First Year		
CSC 169	Introduction to Computer Science	3
ENG 101	College English I	3
ENG 102	College English II	3
HED 100	Personal and Community Health	2
MTH 184	Calculus I	4
MTH 251	Calculus II	4
PED 100	Fundamentals of Fitness for Life	1
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
SEM 101 & SEM 102	Spartan Seminar 101 and Spartan Seminar 102	2
Credits		32
Second Year		
SEM 201	Spartan Seminar 201	1
CHM 221	General Chemistry I	3
CHM 221L	General Chemistry I Laboratory	1
CHM 222	General Chemistry II	3
CHM 222L	General Chemistry II Laboratory	1
EEN 301	Engineering Electronics I, Electronic Devices	3
ENG 203	Advanced Communication Skills	3
XXX XXX	Cultural Perspectives (Humanities)	3
ENG 383 or MUS 234	African-American Literature, 1940-PRESENT or African-American Music	
MTH 252	Calculus III	4
MTH 372	Differential Equations	3
PHY 241	Physics Seminar	1
PHY 260	University Physics III	4

PHY 350	Modern Physics	3
PHY 351	Modern Physics	2
Credits		35

Summer

PHY 397	Introduction to Research (to fulfill Elective Requirement)	3
Credits		3

Third Year

PHY 356	Heat and Thermodynamics	3
PHY 365	Physical Mechanics	3
PHY 366	Physical Mechanics	3
PHY 375	Electricity and Magnetism I	3
PHY 380	Quantum Mechanics I	3
PHY 399	Advanced Laboratory	2
ENG 285	Public Speaking	3
XXX XXX	Social Science Elective from the Core	3
Select one Cultural Perspectives (Social Sciences) of the following:		3
HIS 335	African-American History	
HIS 336	African-American History Since 1865	
HIS 371	Modern African History & Cultures 1600-PRESENT	
HIS 320	Independent Latin America	
XXX XXX	Elective (unrestricted)	1
Select two of the following Restricted Math Electives:		6
MTH 300	Linear Algebra	
MTH 373	Advanced Vector Calculus	
MTH 474	Complex Variables	
PHY 345	Mathematical Methods Physical Sciences I	
PHY 445	Mathematical Methods for Physical Sciences II	

Credits 33

Fourth Year

CHM 545	Mathematical Method	3
XXX XXX	Humanities Elective from the Core	3
MSE 530	Materials Science	3
MSE 533	Polymers/Composites	3
PHY 468	Optics	3
PHY 475	Electricity and Magnetism II	3
PHY 480	Quantum Mechanics II	3
PHY 498	Sr Project I	2
PHY 499	Sr Project II	2
PHY 565	Physical Mechanics	3
PHY 580	Quantum Mechanics for Material Science	3

Credits 31

Summer

MSE 697	Research I	1-9
Credits		1-9

Fifth Year

CHM 573	Advance Inorganic	3
CHM 663	Atomic and Molecular Spectroscopy	3
MSE 575	Basic Instrumentation for Material Science	3
CHM 633	Molecular Dynamics	3

MATS 710	Special Topics II	3
MATS 797	Research III	3
MATS 799	Thesis	3
PHY 653	Solid State Physics	3
PHY 675	Electricity and Magnetism	3
Credits		27
Total Credits		162-170