BACHELOR OF SCIENCE-Physics Major Track A (Research) 2015-2016 Old Dominion University Catalog	NAME
2013-2016 Old Dominion University Catalog	UIN:
Additionally, courses in which a grade of "C-" or below were earned will require additional credits to meet the 120 credit hour graduation minimum.	lire a grade of C or better to transfer, even with the AS degree. The e AS (including foreign language), regardless of the grade earned.  Il not transfer. Therefore Community College degree holders may
Entrance Writing Sample Placement Test:	Entrance Math Placement Test:
LOWER DIVISION GENERAL EDUCATION REQUIREMENTS  A. Skills grade/credit VCCS transfer equivalent	
A. <i>Skills</i> grade/credit <i>VCCS transfer equivalent</i> Written Communication–6 hours	Physics Course Requirements grade/credit Transfer  MATH 211 Calculus I*  4
ENGL 110C English Composition I3 AS/ENG 111	MATH 211 Calculus II 4
ENGL 211C, 231C 3 AS/ENG 112, 210, or 115,	MATH 312 Calculus III 4 MATH 285
<u>131</u>	MATH 307 Differential Equations3 MATH 280
Oral Communication 2 hours 2 CST 100 105 110 111	MATH 316 or 401 or 421 or 4223
<u>Oral Communication–3 hours</u> COMM 101R, 103R, 112R  3 <u>CST 100, 105, 110, 111, 112, or 126</u>	MATH 316 or 401 or 421 or 422  CHEM 121N/122N Chemistry I**  CHEM 123N/124N Chemistry II **  4 CHM 111 or 113  CHEM 123N/124N Chemistry II **
COMINI 101K, 103K, 112K	CS 150 Intro to Programming  4 CHIM 112 of 114  4 CHIM 112 of 114
Mathematics-3 hours	CS 150 Intro to Programming 4 PHYS 231N University Physics I* 4
MATH 162M <u>satisfied in the major</u>	PHYS 232N University Physics II* 4
1. 1.C.1. 0.C.1 1.C.(1.C.(TODD)	PHYS 303 Laboratory (F)3
Language and Culture –0-6 hours AS/HS/TOEFL BS students' competence must be at the 102 or 111 level.	PHYS 323 Modern Physics (F)3
Consult transfer guide for all equivalencies.	PHYS 355 Math Methods (F)3
Consult transfer garde for an equivalences.	PHYS 319 Analytical Mechanics (S)3 PHYS 413 Exp. Physics Methods (S)3
<u>Information Literacy–3 hours</u>	PHYS 425 Electromagnetism I (F) 3
CS 120G, CS 121G, LIBS 110G,3 AS/ITE 119	PHYS 452 Quantum Mechanics I (F) 3
or ECE 111 + CS 112	PHYS 420 Computational Physics (F) 3
D. Ways of Knowing	PHYS 453 Electromagnetism II (S) 3 PHYS 454 Thermal Physics (S) 3 PHYS 456 Quantum Mechanics II (S) 3 PHYS 400W at 450W/400W Theria
B. Ways of Knowing Human Creativity3 hours	PHYS 454 Thermal Physics (S)3
ARTH 121A, ARTS122A, 3 AS/ART 100–106, 111–	PHYS 499W or 489W/490W Thesis 3
114,—;	PHYS 499W or 489W/490W Thesis3 Physics Seminar: PHYS 120 or 309
DANC 185A, MUSC 264A, <u>MUS 121, 122, 125;</u>	Two courses from:
THEA 241A, COMM/THEA CST 130, 141, 142, 151,	PHYS 313, 350, 411, 415, 416, 4173
152, 231, 232, 250;	with at least three credits 4xx3
History3 hours HIST 100H, 101H, 102H, 103H,3 HIS 101, 102, 111,	*Physics majors must earn a grade of "C" or better in
104H, 105H	MATH 211, PHYS 231 and PHYS 232.
232, 253, 254	**(CHEM 137N/138N) or (CHEM 121N/122N/123N/124N)
<u>Literature3 hours</u>	(F) Offered Fall only
ENGL 112L, 114L, FLET 100L3 <u>AS/ENG 125, 236, 237,</u>	(S) Offered Spring only
241–246, 251–256, 267, or 268	LIBBER DIVIGION GENERAL EDUCATION
Philosophy and Ethics–3 hours	<b>UPPER DIVISION GENERAL EDUCATION</b> Satisfied by any University approved 2 <sup>nd</sup> major, minor, cluster, or two
PHIL 110P, 120P, 140P, 230E,3 <u>AS/PHI 100, 101, 102</u>	upper-division courses (6 credits) outside of the College of Sciences,
250E, 303E, 344E, 345E, 441E, <u>111, 112, 115, 220,</u>	and not required by the major (Gen Ed Option D).
442E <u>REL 230, 231, or 232</u>	
Natural Sajanaa and Taahnalagu, 8 hours. Mat in the major	120 HOURS AND A 2.0 GRADE POINT AVERAGE IN THE
Natural Science and Technology–8 hours Met in the major	MAJOR, MINOR, AND OVERALL ARE NEEDED TO GRADUATE.
Human Behavior–3 hours 3 AS	Additional Graduation Requirements:
ANTR 110S, CRJS 215S, ECON 200S, ECON 201S, ECON 202S,	Application for Graduation
GEOG 100S, GEOG 101S, POLS 100S, POLS 101S, POLS 102S,	Application for Graduation Passage of Physics Exit Exam
PSYC 201S, PSYC 203S, SOC 201S, COMM 200S, WMST 201S,	Senior Assessment
FIN 210S	
The Impact of Technology–3 hours 3 AS	PHYSICS MINOR: (12 credits at 300-400 level) PHYS 319 3
CS300T, DNTH 440T, ENGL307T, GEOG 306T, HIST 300T, HIST	PHYS 323
304T, HIST 389T, HIST 386T/SCI 302T, IT 360T, MUSC 335T,	6 additional credits at 300-400 level 3
POLS 350T, STEM 110T, STEM 370T, WMST 390T, COMM 372T,	PHYS 319 PHYS 323 6 additional credits at 300-400 level 3 3 3
PHIL 383T	edited: June 29, 2015