UMass Dartmouth
COLLEGE OF ENGINEERING

Bachelor of Science PHYSICS

Curriculum Requirements

Catalog Year 2016-17 to present

FRESHMAN YEAR

Fall Semester			R	L	C	Spring Semester			R	L	C
ENL	101	Critical Writing & Reading I	3	0	3	ENL	102	Critical Writing & Reading II	3	0	3
PHY	113	Classical Physics I [1]	4	2	4	PHY	114	Classical Physics II [1, 5]	4	2	4
PHY	109	Freshman Seminar [2]		0	3	MTH	152	Calculus II [4]	4	0	4
MTH	151	Calculus I [4]	4	0	4			University Studies [3]	3	0	3
		University Studies [3]	3	0	3			Free Elective	3	0	3
					17						**17**

SOPHOMORE YEAR

Fall Semester			R	L	C	Spring Semester			R	L	C
PHY	115	Intro to Classical Physics [6]	4	0	3	PHY	213	Applied Modern Physics	4	0	3
PHY	225	Introductory Experiment. Physics I [7]	2	3	3	PHY	227	Introductory Experiment. Physics II [8]	0	3	1
MTH	211	Analytic Geometry & Calculus III [4]	4	0	4	PHY	234	Interm. Mathematical Physics	3	0	3
		University Studies [3]	3	0	3	MTH	212	Differential Equations	3	0	3
						MTH	280	Introduction to Scientific Program.	3	0	3
					13						**13**

JUNIOR YEAR

Fall Semester			R	L	C	Spring Semester			R	L	C
PHY	313	Mechanics	3	0	3	PHY	341	Quantum Mechanics I	3	0	3
PHY	322	Electronic Devices & Circuits II [9]	2	2	3	PHY	411	Electric & Magnetic Fields I	3	0	3
PHY	343	Mathematical Physics I [8]	3	0	3	PHY	441	Statistical Thermodynamics[8]	3	0	3
		Free Elective	3	0	3			University Studies [3]	3	0	3
		Science Elective [10]	3	0	3			Science Elective [10]	3	0	3
					15						**15**

SENIOR YEAR

Fall Semester			R	L	C	Spring Semester			R	L	C
PHY	342	Quantum Mechanics II	3	0	3	PHY	442	Elements of Solid State Physics [8]	3	0	3
PHY	421	Advanced Laboratory	0	6	3	PHY		Physics Elective (300+ level) [8]	3	0	3
PHY	412	Electric & Magnetic Fields II [8]	3	0	3	PHY		Physics Elective (300+ level) [8]	3	0	3
PHY		Physics Elective (300+ level) [8]	3	0	3			Free Elective (300+ level)	3	0	3
		University Studies [3]	3	0	3			Free Elective	3	0	3
					15						**15**

Total Credits = 120 R = Recitation & Lecture (hours) L = Laboratory (hours) C = Number of Credits

To graduate with a Bachelor of Science degree in Physics, a minimum of 120 university credits are required. Of these, 45 credits must be approved Physics courses, and 30 credits must be at the 300-level or higher. A 2.000 cumulative GPA for all courses as well as a 2.000 cumulative GPA for approved Physics courses is required to graduate. Approved Physics courses include all PHY courses at the 300-level or higher, together with PHY courses 111, 112, 113, 114, 115, 213, 225, 227, 234, 252, and 271.

[1]PHY 111 and PHY 112 can substitute for PHY 113 and PHY 114, respectively.
[2]PHY 109 satisfies University Studies Cluster 1E.
[3]See University Studies requirements for Clusters 3 and 4.
[4]MTH 153, MTH 154, and MTH 213 can substitute for MTH 151, MTH 152 and MTH 211, respectively.
[5]PHY 114 satisfies University Studies Cluster 2A.
[6]PHY 115 satisfies University Studies Cluster 2B.
[7]This course satisfies the University Studies Cluster 1C: Intermediate Writing requirement.
[8]Recommended as a Physics Elective. Course selection should be discussed with the faculty advisor.
[9]A minimum of 6 credits of advanced lab courses is required. Other courses may be substituted with approval of the faculty advisor.
[10]Students must complete 6 credits in a second science, mathematics or engineering. Select courses from one of BIO, BNG, CHM, CIS, CEN, ECE, MNE, MTH or Astrophysics (PHY 252 & PHY 363) which satisfy the major requirement for the respective department. Courses must be approved by the faculty advisor.