DIGITAL MEDIA DESIGN, BSE

The Digital Media Design (DMD) program is an interdisciplinary major in the School of Engineering and Applied Science at Penn. As a full-fledged Bachelor of Science in Engineering (BSE) degree, it combines major coursework in computer graphics within the Computer & Information Science Department, communication theory courses from the Annenberg School and Fine Arts courses from Penn's School of Design. The program was designed for students who have an interest in computer graphics, animation, games, and the design of virtual reality environments and interactive technologies.

For more information: https://www.seas.upenn.edu/prospective-students/undergrad/majors/digital-media-design/

Digital Media Design (DMD) Major Requirements

37 course units are required.

Code	Title	Course Units
Engineering		
CIS 1100	Introduction to Computer Programming	1
CIS 1200	Programming Languages and Techniques I	1
CIS 1210	Programming Languages and Techniques II	1
CIS 2400	Introduction to Computer Systems	1
CIS 2620	Automata, Computability, and Complexity	1
CIS 3200	Introduction to Algorithms	1
CIS 4600	Interactive Computer Graphics	1
or CIS 5600	Interactive Computer Graphics	
Two of the following:		2
CIS 4610	Advanced Rendering	
or CIS 5610	Advanced Computer Graphics	
or CIS 4620	Computer Animation	
or CIS 5620	Computer Animation	
or CIS 4550	Internet and Web Systems	
or CIS 5550	Internet and Web Systems	
CIS 4670	Scientific Computing	1
or CIS 5670	Scientific Computing	
CIS 4970	DMD Senior Project	1
CIS Electives [1]		3
Math & Natural Science		
MATH 1400	Calculus, Part I	1
MATH 1410	Calculus, Part II	1
or MATH 1610	Honors Calculus	
MATH 2400	Calculus, Part III	1
or MATH 2600	Honors Calculus, Part II	
or MATH 3120	Linear Algebra	
or MATH 3130	Computational Linear Algebra	
or MATH 3140	Advanced Linear Algebra	
CIS 1600	Mathematical Foundations of Computer Science	1
CIS 2610	Discrete Probability, Stochastic Processes, and Statistical Inference	1
or ESE 3010	Engineering Probability	
or STAT 4300	Probability	
MEAM 1100 & MEAM 1470	Introduction to Mechanics and Introduction to Mechanics Lab	1.5
or PHYS 0150	Principles of Physics I: Mechanics and Wave Motion	
or PHYS 0170	Honors Physics I: Mechanics and Wave Motion	
Select from the following list:		1.5
BIOL 1101	Introduction to Biology A	
BIOL 1121 & BIOL 1124	Introduction to Biology - The Molecular Biology of Life and Introductory Organismal Biology Lab	
CHEM 1011 & CHEM 1101	Introduction to General Chemistry I and General Chemistry Laboratory I	
ESE 1120	Engineering Electromagnetics	
PHYS 0151	Principles of Physics II: Electromagnetism and Radiation	
PHYS 0171	Honors Physics II: Electromagnetism and Radiation	
Math or Natural Science Elective		1
DMD Electives		
Advisor Approval Required		
FNAR 0010	Drawing I	1
or FNAR 2200	Drawing Investigations	
or FNAR 1080	Figure Drawing I	
DSGN 1030	3-D Computer Modeling	1
or DSGN 2010	Digital Figure Modeling	
Select 4 DMD Electives [2]		4
General Electives [3]		
Select 5 Social Science or Humanities courses		5
Select 2 Social Science or Humanities or Technology in Business & Society courses		2
Free Elective		
Select 1 free elective [4]		1
Total Course Units		**37**

[1] A CIS Elective is a CIS or NETS engineering course at the 1000 level or above, or ESE 3500 Embedded Systems/Microcontroller Laboratory (NOTE: not all CIS/NETS courses are **engineering** courses; please see the SEAS Undergraduate Handbook (https://ugrad.seas.upenn.edu/student-handbook/courses-requirements/engineering-courses/). At most, one CU of 1000-level coursework may be used as a CIS Elective.

[2] Select courses from offerings in the following categories: COMM, FNAR, CIMS, DSGN, THAR, MKTG, ARTH, IPD, MUSC, EDUC. Courses from other categories require advisor approval.

[3] Must include a Writing Seminar (a list of approved Writing Seminars can be found in the SEAS Undergraduate Handbook (https://ugrad.seas.upenn.edu/student-handbook/courses-requirements/writing-courses/))

[4] Approval is required.

The degree and major requirements displayed are intended as a guide for students entering in the Fall of 2023 and later. Students should

consult with their academic program regarding final certifications and requirements for graduation.
