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 in Engineering and Science (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. The Digital Media Design Program was established in response to what we perceived as a growing rift within the computer graphics and animation industry.

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.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Course Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 110</td>
<td>Introduction to Computer Programming</td>
<td>1</td>
</tr>
<tr>
<td>CIS 120</td>
<td>Programming Languages and Techniques I</td>
<td>1</td>
</tr>
<tr>
<td>CIS 121</td>
<td>Programming Languages and Techniques II</td>
<td>1</td>
</tr>
<tr>
<td>CIS 240</td>
<td>Introduction to Computer Systems</td>
<td>1</td>
</tr>
<tr>
<td>CIS 262</td>
<td>Automata, Computability, and Complexity</td>
<td>1</td>
</tr>
<tr>
<td>CIS 320</td>
<td>Introduction to Algorithms</td>
<td>1</td>
</tr>
<tr>
<td>CIS 460</td>
<td>Interactive Computer Graphics</td>
<td>1</td>
</tr>
</tbody>
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Two of the following: 2

- CIS 461 Advanced Computer Graphics
- CIS 462 Computer Animation
- CIS 455 Internet and Web Systems
- CIS 467 Scientific Computing
- CIS 497 DMD Senior Project
- CIS 200 level or above 2
- CIS Elective 1

Math & Natural Science

- MATH 104 Calculus, Part I 1
- MATH 114 Calculus, Part II 1
- MATH 240 Calculus, Part III 1
- or MATH 312 Linear Algebra
- or MATH 313 Computational Linear Algebra
- or MATH 314 Advanced Linear Algebra
- CIS 160 Mathematical Foundations of Computer Science 1
- CIS 261 Discrete Probability, Stochastic Processes, and Statistical Inference 1
- or ESE 301 Engineering Probability
- or ENM 321 Engineering Statistics
- or STAT 430 Probability
- MEAM 110 Introduction to Mechanics & MEAM 147 and Introduction to Mechanics Lab 1.5

Select from the following list: 1.5

- BIOL 101 Introduction to Biology A
- BIOL 121 & BIOL 124 Introduction to Biology - The Molecular Biology of Life and Introductory Organismal Biology Lab
- CHEM 101 General Chemistry I & CHEM 053 and General Chemistry Laboratory I
- ESE 112 Engineering Electromagnetics
- PHYS 151 Principles of Physics II: Electromagnetism and Radiation
- PHYS 171 Honors Physics II: Electromagnetism and Radiation

Math or Natural Science Elective 1

DMD Electives

Advisor Approval Required

- FNAR 123 Drawing I
- or FNAR 124 Drawing Investigations
- or FNAR 280 Figure Drawing I
- DSGN 235 3-D Computer Modeling
- or DSGN 236 Digital Figure Modeling

Select 4 DMD Electives 1

General Electives 2

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 electives 3 1

Total Course Units 37

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.

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/))

Approval is required.

The degree and major requirements displayed are intended as a guide for students entering in the Fall of 2020 and later. Students should consult with their academic program regarding final certifications and requirements for graduation.