BACHELOR OF SCIENCE IN COMPUTATIONAL MEDIA - PEOPLE - FILM, PERFORMANCE, & MEDIA STUDIES

The Bachelor of Science in Computational Media is a collaborative effort by the College of Computing and the School of Literature, Media, and Communication (LMC). The program offers a thorough education in all aspects of the computer as a medium: the technical, the historical-critical, and the applied. Program graduates will have both significant hands-on and theoretical knowledge of computing and an understanding of visual design and the history of media. Graduates will be uniquely positioned to plan, create, and critique new digital media forms for entertainment, education, and business communication.

The program requires 36 credit hours of courses in computer science and 30 credit hours of courses in LMC (in addition to the humanities requirement). A substantial number of required courses in each unit ensures that every student has basic competence in:

- computational principles;
- the representation and manipulation of digital media, including graphics and sound;
- software design;
- visual and interactive design;
- digital arts; and
- media theory and history.

After completing required courses, students specialize in a specific area of media computing. Typical specialty areas include:

- Interactive games design: This is one of the fastest growing areas of digital media production and is already a $7 billion industry.
- Special effects: As special effects become more complex and focused on computer-generated imagery, employment in this area will increasingly require expertise in both media and computer science.
- Culturally informed program design: As programming work is increasingly outsourced to nations offering lower labor costs, programming that adds value through a sophisticated response to the needs of specific corporate and group cultures will offer job security to American programmers.

Depending on their coursework within the BS program, students will also be qualified to enter graduate studies in computer science, digital arts, digital media studies, and human-computer interface.

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<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>APPH 1040</td>
<td>Scientific Foundations of Health</td>
<td>2</td>
</tr>
<tr>
<td>or APPH 10</td>
<td>The Science of Physical Activity and Health</td>
<td></td>
</tr>
<tr>
<td>ENGL 1101</td>
<td>English Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 1102</td>
<td>English Composition II</td>
<td>3</td>
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Core B - Institutional Options

- CS 1301 Introduction to Computing 1 3

Core C - Humanities

- Any HUM 3
- Any LMC HUM 3

Core D - Science, Math, & Technology

- Lab Science 8
- MATH 1551 Differential Calculus 2
- MATH 1554 Linear Algebra 4
  or MATH 1555 Linear Algebra with Abstract Vector Spaces 4

Core E - Social Sciences

Select one of the following: 3

- HIST 2111 The United States to 1877
- HIST 2112 The United States since 1877
- INTA 1200 American Government in Comparative Perspective
- POL 1101 Government of the United States
- PUBP 3000 American Constitutional Issues
- PSYC 1101 General Psychology 3
- Any SS (http://www.catalog.gatech.edu/academics/undergraduate/core-curriculum/core-area-e) 6

Core F - Courses Related to Major

- CS 1331 Introduction to Object Oriented Programming 1 3
- CS 1332 Data Structures and Algorithms for Applications 1 3
- CS 2050 Introduction to Discrete Mathematics for Computer Science 1 3
- CS 2340 Objects and Design 1 3
- LMC 2700 Introduction to Computational Media 1 3
- MATH 2550 Introduction to Multivariable Calculus 4 2

Major Requirement

- CS 2261 Media Device Architectures 1 4
- CS 4001 Computing, Society, and Professionalism 3
  or CS 4726 Privacy, Technology, Policy, and Law 3
  or SLS 311 Technology and Sustainable Community Development 3

Junior Design Option (Capstone)

- Junior Design Option 1,3 6

People Requirements

- PSYC 2015 Research Methods 1 4

Select one of the following: 1 3

- PSYC 2210 Social Psychology
- PSYC 2760 Human Language Processing
- PSYC 3040 Sensation and Perception

Select two of the following: 1 6

- CS 3750 Human Computer Interface Design and Evaluation 1
- CS 3790 Introduction to Cognitive Science
- CS 4660 Introduction to Educational Technology
- CS 4745 Information and Communication Technologies and Global Development

Select one of the following: 1 3

- CS 4460 Introduction to Information Visualization
Graduate Cooperative Plan (http://www.catalog.gatech.edu/academics/special-academic-programs/experiential-education/graduate-cooperative-plan)

**International Plan**

The Computational Media (CM) International Plan follows the Institute model to develop a global competence within the student’s major program of study. It thus integrates international studies and experiences with work in all aspects of the computer as a medium, preparing graduates to plan, create, and critique new digital media forms within an international professional environment.

As in the basic CM program, students following the International Plan will take credit 36 hours of courses in CS and 30 credit hours of courses in LMC (in addition to the basic humanities requirement). Students will also:

1. take three international courses, including one from each of the following categories: International Relations, Global Economics, and a course on a specific country or region;
2. spend two terms abroad engaged in any combination of study abroad, research, or internship;
3. demonstrate language proficiency equivalent to two years of college-level language study (to be determined by testing); and
4. complete a CM capstone course that links international studies with the major.

**Research Option**

The CM Research Plan follows the Institute model to allow students to incorporate research experiences into the major program of study. Students will complete nine hours of credit research work on various aspects of the computer as a medium, working in such areas as computational principles, the representation and manipulation of digital media, software design, visual and interactive design, digital art, and media theory and history.

As in the basic CM program, students following the Research Plan will take credit 36 hours of courses in CS and 30 credit hours of courses in LMC (in addition to the basic humanities requirement). CM students can complete the Research Option with nine CS or LMC research hours. Students cannot have a mix of both counts towards the Research Option. The breakdown of hours is as follows:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td></td>
<td>Undergraduate Research</td>
<td>9</td>
</tr>
<tr>
<td>LMC 4701</td>
<td>Undergraduate Research Proposal Writing</td>
<td>1</td>
</tr>
<tr>
<td>LMC 4702</td>
<td>Undergraduate Research Thesis Writing</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Total Credit Hours</td>
<td>11</td>
</tr>
</tbody>
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**BS/MS Computational Media and Digital Media**

Students who want to pursue the five-year BS/MS combination in CM and DM must apply to the school of LMC after completing at least 75 hours of work towards the CM degree. Applicants should have a cumulative GPA of at least 3.5. This GPA must be maintained for the student to take graduate level courses. Students must start the program in the Fall to be on track with other MS students.

Students admitted to the program will take a total of twelve credit hours of graduate course work during their final undergraduate year; six credit...
hours of that work, in DM courses, will count towards two 4000 level LMC courses (6 hours) and will count for both undergraduate and graduate credit. During the summer term after their fourth year, students will participate in an approved internship program. During their fifth year, students will take a total of 24 credit hours, including either LMC 6800 or LMC 7000, and with no more than three courses taken outside of the DM program.