BACHELOR OF SCIENCE IN COMPUTATIONAL MEDIA - PEOPLE - GAME 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.

Wellness

APPH 1040  Scientific Foundations of Health 2
or APPH 10  The Science of Physical Activity and Health

Core A - Essential Skills

ENGL 1101  English Composition I 3
ENGL 1102  English Composition II 3
MATH 1552  Integral Calculus 4

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

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

Junior Design Option (Capstone)

Junior Design Option 1,3 6

People Requirements

PSYC 2015  Research Methods 1 4
Select one of the following: 3
PSYC 2210  Social Psychology
PSYC 2760  Human Language Processing
PSYC 3040  Sensation and Perception

Select two of the following: 6

CS 3750  Human Computer Interface Design and Evaluation
CS 3790  Introduction to Cognitive Science
CS 4660  Introduction to Educational Technology

Select one of the following: 1
CS 4460  Introduction to Information Visualization
CS 4470  Introduction to User Interface Software
CS 4605  Mobile and Ubiquitous Computing
CS 4625  Intelligent and Interactive Systems

Game Studies Requirements

Select 3 of the following: 1 9
LMC 4720  Interactive Narrative 1
LMC 4725  Games Design as a Cultural Practice
LMC 4731  Game AI
CS 3600  Introduction to Artificial Intelligence 1 3
CM or Media Courses 1,2 15

Free Electives
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 36 credit 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 count towards the Research Option. The breakdown of hours is as follows:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<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>
</table>

### 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.