

# BACHELOR OF SCIENCE IN COMPUTER SCIENCE - THREAD: MEDIA & PEOPLE

The Threads™ represent partial paths through the curriculum. Thus, a student weaves a degree from these Threads. Students are not forced to make Thread decisions very early in their academic careers; however, they may if they want. We define the Threads so they are flexible enough to allow for a variety of technical and creative experiences. Threads are coherent enough that students develop computing skills even if their focus shifts as they go along.

The Media thread is where computing meets design. This thread prepares students by helping them to understand the technical and computational capabilities of systems in order to exploit their abilities to provide creative outlets.

The People thread is where computing meets users. This thread prepares students by helping them to understand the theoretical and computational foundations for designing, building, and evaluating systems that treat the human as a central component.

Code	Title	Credit Hours
<b>Wellness</b>		
APPH 1040	Scientific Foundations of Health	2
	or APPH 10 The Science of Physical Activity and Health	
<b>Core A - Essential Skills</b>		
ENGL 1101	English Composition I	3
ENGL 1102	English Composition II	3
MATH 1552	Integral Calculus	4
<b>Core B - Institutional Options</b>		
CS 1301	Introduction to Computing <sup>1</sup>	3
<b>Core C - Humanities</b>		
Any HUM ( <a href="http://www.catalog.gatech.edu/academics/undergraduate/core-curriculum/core-area-c">http://www.catalog.gatech.edu/academics/undergraduate/core-curriculum/core-area-c</a> )		6
<b>Core D - Science, Math, &amp; Technology</b>		
PHYS 2211	Introductory Physics I <sup>2</sup>	4
Lab Science <sup>2</sup>		4
MATH 1551	Differential Calculus	2
MATH 1554	Linear Algebra <sup>5</sup>	4
	or MATH 1555 Linear Algebra with Abstract Vector Spaces	
<b>Core E - Social Sciences</b>		
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 ( <a href="http://www.catalog.gatech.edu/academics/undergraduate/core-curriculum/core-area-e">http://www.catalog.gatech.edu/academics/undergraduate/core-curriculum/core-area-e</a> )		6
<b>Core F - Courses Related to Major</b>		

Lab Science <sup>2</sup>		4
CS 1100	Freshman Leap Seminar	1
CS 1331	Introduction to Object Oriented Programming <sup>1</sup>	3
CS 1332	Data Structures and Algorithms for Applications <sup>1</sup>	3
CS 2050	Introduction to Discrete Mathematics for Computer Science <sup>1</sup>	3
or CS 2051	Honors - Induction to Discrete Mathematics for Computer Science	
MATH 2550	Introduction to Multivariable Calculus <sup>5</sup>	2
<b>Major Requirements</b>		
CS 2340	Objects and Design <sup>1</sup>	3
CS 4001	Computing, Society, and Professionalism <sup>1</sup>	3
	or CS 4002 Robots and Society	
	or CS 4726 Privacy, Technology, Policy, and Law	
	or SLS 311C Technology and Sustainable Community Development	
<b>Junior Design Options (Capstone)</b>		
Junior Design Option <sup>1,4</sup>		6
<b>Concentration</b>		
Select one of the following for Media Architectures: <sup>1</sup>		4
CS 2110	Computer Organization and Programming	
CS 2261	Media Device Architectures	
PSYC 2015	Research Methods <sup>1</sup>	4
CS 3451	Computer Graphics <sup>1</sup>	3
Select six credit hours of the following for Media Technologies: <sup>1,3</sup>		6
CS 4455	Video Game Design and Programming	
CS 4460	Introduction to Information Visualization	
CS 4464	Computational Journalism	
CS 4475	Computational Photography	
CS 4480	Digital Video Special Effects	
CS 4496	Computer Animation	
CS 4590	Principles and Applications of Computer Audio	
CS 3750	Human Computer Interface Design and Evaluation <sup>1</sup>	3
Select six credit hours of the following for Human-Centered Technology: <sup>1,3</sup>		6
CS 3790	Introduction to Cognitive Science	
CS 4660	Introduction to Educational Technology	
CS 4460	Introduction to Information Visualization	
CS 4470	Introduction to User Interface Software	
CS 4472	Design of Online Communities	
CS 4605	Mobile and Ubiquitous Computing	
CS 4745		
Select one of the following for Social/Behavioral Science for Computing: <sup>1</sup>		3
PSYC 2210	Social Psychology	
PSYC 2760	Human Language Processing	
PSYC 3040	Sensation and Perception	
<b>Other Required Courses</b>		
MATH 3012	Applied Combinatorics	3
Select one of the following:		3
MATH 3215	Introduction to Probability and Statistics	

MATH 3670 Probability and Statistics with Applications	
CEE 3770 Statistics and Applications	
ISYE 3770 Statistics and Applications or ISYE 2 Probability with Applications & ISYE 2 (and Basic Statistical Methods)	
<b>Free Electives</b>	
Free Electives	16
<b>Total Credit Hours</b>	<b>126</b>

Pass-fail only allowed for Free Electives (max six credit hours), CS 1100, and CS 1171 (if required)

- 1 Minimum grade of C required.
- 2 Two of three lab sciences MUST be a sequence.
- 3 If CS 4460 is successfully completed, one of the Media Technologies is fulfilled, one of the Human-Centered Technology is fulfilled, and an additional 3 credit hour Thread Elective is required. Thread Electives can be chosen from the following courses: CS 2110, CS 2261, CS 3240, CS 3510, CS 3790, CS 4455, CS 4464, CS 4470, CS 4472, CS 4475, CS 4480, CS 4496, CS 4550, CS 4590, CS 4605, CS 4660, CS 4665, CS 4670, CS 4690, CS 4770, CS 4745, CS 4793, PSYC 2020, PSYC 2210, PSYC 2760, PSYC 3012, PSYC 3040, PSYC 4090, PSYC 4260 or CX 4236.
- 4 Junior Design Options are as follows (students must pick one option and may not change):
  - Option 1 - LMC 3432, LMC 3431, CS 3311, CS 3312.
  - Option 2 - ECE VIP courses and LMC 3403.
  - Option 3 - Satisfy Georgia Tech Research Option.
  - Option 4 - CS 2701 (3 hours), CS 4699-I2P (3 hours), LMC 3403 (3 hours) = 9 hours OR CS 4699- I2P (6 hours), LMC 3403 (3 hours) = 9 hours

Six credits of the Junior Design option are used as Major Requirements and the overage credits of research/VIP (5 credit hours/2 credit hours) may be used as free electives. Students completing VIP for their junior design requirement will be required to complete at least three semesters of VIP. (VIP 1 + VIP 2 + VIP 3) (for a total of 5 credit hours) + LMC 3403 = 8 hours of VIP credit. Students using CREATE-X for junior design take at least 6 hours of CREATE-X Start-up Lab and Idea 2 Prototype (I2P) and 3 of the 6 hours must be I2P. Students take these 6 hours with LMC 3403 (3 hours) for a total of 9 hours. Extra three hours for CREATE-X option can be used in free electives.
- 5 Two credit hours of MATH 1554 may count along with MATH 2550 to give Area F 18 credit hours.

## Cooperative Programs

The College of Computing participates in the undergraduate and graduate Cooperative Programs. See links below for further information:

- Undergraduate Cooperative Plan (<http://catalog.gatech.edu/academics/special-academic-programs/experiential-education/center-career-discovery-development>)
- Graduate Cooperative Plan (<http://catalog.gatech.edu/academics/special-academic-programs/experiential-education/graduate-cooperative-plan>)

## International Plan

The College of Computing (<http://www.cc.gatech.edu>) has an approved BS CS International Plan that accommodates the unique requirements of this option discussed in the International Plan section of the catalog

(<http://www.catalog.gatech.edu/academics/special-academic-programs/international-plan>).

However, due to the flexible nature of the Threads curriculum, the International Plan designation may not be available with all of the Thread combinations. Efforts will be made to work with interested students to accommodate their individual circumstances with regard to the International Plan designator for the Bachelor of Science in Computer Science.

## Research Option

To complete the Research Option in the College of Computing, students must:

1. Complete at least nine units of undergraduate research
  - a. Over at least two, preferably three terms
  - b. Research may be for either pay or credit;
2. Write an undergraduate thesis/report of research on their findings;
3. Take
  - a. LMC 4701: Undergraduate Research Proposal Writing (taken during the first or second semester of research)
  - b. LMC 4702: Undergraduate Research Thesis Writing (taken during the thesis writing semester).

## Research Classes

The following classes count toward fulfillment of the Research Option:

### Research for Credit

Code	Title	Credit Hours
CS 2699	Undergraduate Research (Freshman and Sophomore)	1-12
CS 4699	Undergraduate Research (Junior and Senior)	1-12
CS 4980	Research Capstone Project	1-21

### Research for Pay (Audit only)

Code	Title	Credit Hours
CS 2698	Undergraduate Research Assistantship (Freshman and Sophomore)	1-12
CS 4698	Undergraduate Research Assistantship (Junior and Senior)	1-12

To get credit toward completion of the Research Option for research for pay, students must be registered for the appropriate audit-only, research for pay class (CS 2698 or 4698). If work on research for pay begins after the close of registration and the student has not signed up for the appropriate class, unfortunately it is not possible to get credit toward the Research Option for work that term.

A research project will also fulfill the capstone design requirement if the student registers for CS 4980 for one of the research terms. This is typically done the last semester of research, while taking LMC 4702.

Completion of the Research Option is noted on the student's transcript. For more information, see [www.urop.gatech.edu](http://www.urop.gatech.edu) (<http://www.urop.gatech.edu>).

General Research Option Information (<http://www.catalog.gatech.edu/academics/special-academic-programs/undergraduate-research-opportunities-program>)

## **BS/MS in Computer Science**

Students who want to pursue

the BS/MS option must apply to the MSCS program after completing at least 60 hours of work towards the BSCS degree. Applicants should have a cumulative GPA of at least 3.4. This GPA must be maintained for the student to take graduate level courses.

Students admitted to the program will take 6 hours during their final undergraduate year to double count in both their BSCS and MSCS degrees; they should choose 3 hours of MS Core or Elective hours their fall semester and 3 hours of MS Core or Elective hours their spring semester that can count toward their thread hours and CS Specialization hours.

Visit College of Computing (<https://www.cc.gatech.edu>) for more information.