# Bachelor of Science in Computer Science - Thread: Information Internetworks & 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 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.

The Information Internetworks thread is where computing meets the data enterprise and all that this implies. The thread prepares students for all levels of information management by helping them to capture, represent, organize, transform, communicate, and present data so that it becomes information.

## Wellness
- **APPH 1040** Scientific Foundations of Health 2
- or **APPH 1050** 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 (http://www.catalog.gatech.edu/academics/undergraduate/core-curriculum/core-area-c) 6

## Core D - Science, Math, & Technology
- **PHYS 2211** Introductory Physics I 2 4
- **Lab Science** 2 4
- **MATH 1551** Differential Calculus 2
- **MATH 1554** Linear Algebra 5 4

## Core E - Social Sciences
Select one of the following:
- **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

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab Science</td>
<td>4</td>
</tr>
<tr>
<td>CS 1100</td>
<td>1</td>
</tr>
<tr>
<td>CS 1331</td>
<td>3</td>
</tr>
<tr>
<td>CS 1332</td>
<td>3</td>
</tr>
<tr>
<td>CS 2050</td>
<td>3</td>
</tr>
<tr>
<td>or CS 2051</td>
<td></td>
</tr>
<tr>
<td>MATH 2550</td>
<td>2</td>
</tr>
</tbody>
</table>

## Major Requirements
- **CS 2340** Objects and Design 1 3
- **CS 4001** Computing, Society, and Professionalism 3
- or **CS 4002** Robots and Society

## Junior Design Options (Capstone)
- Junior Design Option 1,4 6

## Concentration
- **CS 2110** Computer Organization and Programming 1 4
- **CS 2200** Computer Systems and Networks 1 4
- **CS 3510** Design and Analysis of Algorithms 1 3
- or **CS 3511** Design and Analysis of Algorithms, Honors
- **PSYC 2015** Research Methods 1 4
- Select six credit hours of the following: 1,3 6
- **CS 3251** Computer Networking
- **CS 4235** Introduction to Information Security
- **CS 4400** Introduction to Database Systems
- Select one of the following: 1,3 3
- **CS 4237** Computer and Network Security
- **CS 4251** Computer Networking II
- **CS 4255** Introduction to Network Management
- **CS 4261** Mobile Applications and Services for Converged Networks
- **CS 4270** Data Communications Laboratory
- **CS 4365** Introduction to Enterprise Computing
- **CS 4420** Database System Implementation
- **CS 4440** Emerging Database Technologies and Applications
- **CS 4675** Internet Computing Systems, Services and Applications
- **CS 3750** Human Computer Interface Design and Evaluation 1 3
- Select six credit hours of the following: 1,3 6
- **CS 3790** Introduction to Cognitive Science
- **CS 4660** Introduction to Educational Technology
- **CS 4470** Introduction to User Interface Software
- **CS 4605** Mobile and Ubiquitous Computing
- **CS 4472** Design of Online Communities
- Select one of the following: 1 3
- **PSYC 2210** Social Psychology
- **PSYC 2760** Human Language Processing
- **PSYC 3040** Sensation and Perception

## Other Required Courses
- **MATH 3012** Applied Combinatorics 3
Select one of the following: 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 202 Probability with Applications & ISYE 2028 Basic Statistical Methods

**Free Electives**
Free Electives 9

**Total Credit Hours** 126

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 labs MUST be a sequence.
3. If CS 4460 is successfully completed, one course from Human-Centered Technology is fulfilled, Advanced Information Management is fulfilled, and an additional 3 credit hours of Free Electives are required.
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 - CS 4699 or LMC 4699 (4 credit hours), LMC 4701, LMC 4702.
   - Option 3 - ECE VIP courses (ECE 3811, ECE 3812, ECE 4811, ECE 4812) and LMC 3403.

Six credits of the Junior Design option are used as Major Requirements and the average 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 four quarters of VIP. (VIP 1 + VIP 2 + VIP 3) for a total of 5 credit hours + VIP 4 (3 credit hours) = 8 hours of VIP credit. VIP 4 must be taken after 90 credit hours at the 4000 level and be on the same project as 2 of VIP 1-3.

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://www.catalog.gatech.edu/specialacademic/divpro.php)
- Graduate Cooperative Plan (http://www.catalog.gatech.edu/specialacademic/coo.php)

**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**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>CS 2699</td>
<td>Undergraduate Research (Freshman and Sophomore)</td>
<td>1-12</td>
</tr>
<tr>
<td>CS 4699</td>
<td>Undergraduate Research (Junior and Senior)</td>
<td>1-12</td>
</tr>
<tr>
<td>CS 4980</td>
<td>Research Capstone Project</td>
<td>1-21</td>
</tr>
</tbody>
</table>

**Research for Pay (Audit only)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 2698</td>
<td>Undergraduate Research Assistantship (Freshman and Sophomore)</td>
<td>1-12</td>
</tr>
<tr>
<td>CS 4698</td>
<td>Undergraduate Research Assistantship (Junior and Senior)</td>
<td>1-12</td>
</tr>
</tbody>
</table>

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).

**Contact Us**

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