## BACHELOR OF SCIENCE IN COMPUTER SCIENCE -THREAD: THEORY & SYSTEMS AND ARCHITECTURE

Wellness APPH 1040 Scientific Foundations of Health or APPH 10 The Science of Physical Activity and Health or APPH 10 Flourishing: Strategies for Well-being and Resilience  Core IMPACTS  Institutional Priority  CS 1301 Introduction to Computing 1 3  Mathematics and Quantitative Skills  MATH 1552 Integral Calculus 4  Political Science and U.S. History  HIST 2111 The United States to 1877  or HIST 21Th 2 United States since 1877  or HIST 21Th 2 United States since 1877  or HIST 22Th 2 United States since 1877  or HIST 22Th 2 United States since 1877  or INTA 12002 rican Government in Comparative Perspective or POL 1 1000 vernment of the United States or PUBP 2000 Prican Constitutional Issues  Arts, Humanities, and Ethics  Any HUM 6  Communicating in Writing  ENGL 1101 English Composition I 3  Technology, Mathematics, and Sciences  Lab Science 2 8  MATH 1551 Differential Calculus 2  MATH 1551 Differential Calculus 3  Or MATH 15Linear Algebra with Abstract Vector Spaces  Social Sciences  Any SS 9  Field of Study  PHYS 2211 Principles of Physics I 2 4  CS 1100 Freshman Leap Seminar 1  CS 1331 Introduction to Object Oriented Programming 1  CS 1332 Data Structures and Algorithms for 3  Applications 1  Or CS 2051 Honors - Induction to Discrete Mathematics for Computer Science  MATH 2550 Introduction to Multivariable Calculus 4 2  Major Requirements  CS 2340 Objects and Design 1 3  Select one for Professionalism/Ethics requirement: 1  CS 3001 Computing, Society, and Professionalism  CS 4001 Computing, Society, and Professionalism	Code	Title	Credit Hours
or APPH 10 The Science of Physical Activity and Health or APPH 10 Flourishing: Strategies for Well-being and Resilience  Core IMPACTS  Institutional Priority  CS 1301 Introduction to Computing 1 3  Mathematics and Quantitative Skills  MATH 1552 Integral Calculus 4  Political Science and U.S. History  HIST 2111 The United States to 1877 or HIST 2111 The United States since 1877 or HIST 2111 & United States since 1877 or HIST 2111 & United States since 1877 or PUBP 3000 Frican Constitutional Issues  Arts, Humanities, and Ethics  Any HUM 6  Communicating in Writing  ENGL 1101 English Composition I 3  ENGL 1102 English Composition II 3  ENGL 1102 English Composition II 3  Exchanology, Mathematics, and Sciences  Lab Science 2 8  MATH 1551 Differential Calculus 2  MATH 1551 Differential Calculus 2  MATH 1554 Linear Algebra 4 4 or MATH 15Linear Algebra with Abstract Vector Spaces  Social Sciences  Any SS 9  Field of Study  PHYS 2211 Principles of Physics I 2 4  CS 1100 Freshman Leap Seminar 1  CS 1331 Introduction to Object Oriented Programming 1  CS 1332 Data Structures and Algorithms for Applications 1  CS 2050 Introduction to Discrete Mathematics for Computer Science 1  or CS 2051 Honors - Induction to Discrete Mathematics for Computer Science 1  or CS 2050 Introduction to Multivariable Calculus 4 2  Major Requirements  CS 2340 Objects and Design 1 3  Select one for Professionalism/Ethics requirement: 1 3  CS 3001 Computing, Society, and Professionalism	Wellness		
or APPH 10 Flourishing: Strategies for Well-being and Resilience  Core IMPACTS  Institutional Priority  CS 1301 Introduction to Computing 1 3  Mathematics and Quantitative Skills  MATH 1552 Integral Calculus 4  Political Science and U.S. History  HIST 2111 The United States to 1877  or HIST 27h2 United States ince 1877  or HIST 27h2 United States ince 1877  or INTA 1200erican Government in Comparative Perspective or POL 1 1200erican Government in Comparative Perspective or PUBP 3000erican Constitutional Issues  Arts, Humanities, and Ethics  Any HUM 6  Communicating in Writing  ENGL 1101 English Composition I 3  ENGL 1102 English Composition II 3  Technology, Mathematics, and Sciences  Lab Science 2  MATH 1551 Differential Calculus 2  MATH 1554 Linear Algebra 4 4 4 or MATH 15Linear Algebra with Abstract Vector Spaces  Social Sciences  Any SS 9  Frield of Study  PHYS 2211 Principles of Physics I 2 4 4 CS 1100 Freshman Leap Seminar 1 1 CS 1331 Introduction to Object Oriented Programming 1 3 CS 1332 Data Structures and Algorithms for Applications 1 1 CS 2050 Introduction to Discrete Mathematics for Computer Science  MATH 2550 Introduction to Discrete Mathematics for Computer Science  MATH 2550 Introduction to Discrete Mathematics for Computer Science  MATH 2550 Introduction to Multivariable Calculus 4 2  Major Requirements  CS 2340 Objects and Design 1 3  Select one for Professionalism/Ethics requirement: 1 3  CS 3001 Computing, Society, and Professionalism	APPH 1040	Scientific Foundations of Health	2
Core IMPACTS           Institutional Priority           CS 1301         Introduction to Computing ¹         3           Mathematics and Quantitative Skills           MATH 1552         Integral Calculus         4           Political Science and U.S. History           HIST 2111         The United States to 1877         or HIST 2Thê United States since 1877           or INTA 1200erican Government in Comparative Perspective or POL 1 1000 vernment of the United States or PUBP 2000erican Constitutional Issues         4           Arts, Humanities, and Ethics           Any HUM         6           Communicating in Writing           ENGL 1101         English Composition I         3           ENGL 1102         English Composition II         3           Technology, Mathematics, and Sciences           Lab Science 2         8           MATH 1551         Differential Calculus         2           MATH 1554         Linear Algebra 4 dor MATH 15Linear Algebra with Abstract Vector Spaces           Social Sciences           Any SS         9           Frield of Study           PHYS 2211         Principles of Physics I 2         4           CS 1331         Introduction to Object Oriented Programming ¹ <td>or APPH 10</td> <td>The Science of Physical Activity and Health</td> <td></td>	or APPH 10	The Science of Physical Activity and Health	
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Computer Science <sup>1</sup> or CS 2051 Honors - Induction to Discrete Mathematics for Computer Science  MATH 2550 Introduction to Multivariable Calculus <sup>4</sup> 2  Major Requirements  CS 2340 Objects and Design <sup>1</sup> 3  Select one for Professionalism/Ethics requirement: <sup>1</sup> 3  CS 3001 Computing, Society, and Professionalism	CS 1332	Data Structures and Algorithms for	3
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CS 3001 Computing, Society, and Professionalism	CS 2340	Objects and Design <sup>1</sup>	3
CS 3001 Computing, Society, and Professionalism	Select one for	Professionalism/Ethics requirement: 1	3
CS 4001 Computing, Society, and Professionalism			
	CS 4001	Computing, Society, and Professionalism	

CS 4002	Robots and Society		
CS 4003	Al, Ethics, and Society		
CS 4726	Privacy, Technology, Policy, and Law		
SLS 3110	Technology and Sustainable Community Development		
Junior Design	Options (Capstone)		
Junior Design		6	
Concentration		J	
CS 2110	Computer Organization and Programming <sup>1</sup>	4	
CS 2200	Computer Systems and Networks <sup>1</sup>	4	
CS 3210	Design of Operating Systems <sup>1</sup>	3	
CS 3220	Computer Structures: Hardware/Software	3	
00 0220	Codesign of a Processor <sup>1</sup>	Ü	
CS 3510	Design and Analysis of Algorithms <sup>1</sup>	3	
or CS 3511	Design and Analysis of Algorithms, Honors		
ECE 2031	Digital Design Laboratory <sup>1</sup>	2	
CS 4510	Automata and Complexity Theory <sup>1</sup>	3	
CS 4540	Advanced Algorithms <sup>1</sup>	3	
Select one of	the following for Systems Software Tools: 1	3	
CS 3300	Introduction to Software Engineering		
CS 4240	Compilers, Interpreters, and Program Analyzers		
	the following for Advanced Systems	3	
Architectures	1	Ü	
CS 4210	Advanced Operating Systems		
CS 4220	Programming Embedded Systems		
CS 4290	Advanced Computer Organization		
MATH 3406	A Second Course in Linear Algebra <sup>1</sup>	3	
Select one of the following for Advanced Mathematics: 1			
MATH 4022Introduction to Graph Theory			
MATH 4032 Combinatorial Analysis			
MATH 415	OIntroduction to Number Theory		
Other Require	d Courses		
MATH 3012	Applied Combinatorics	3	
Select one of	the following:	3	
MATH 321	5Introduction to Probability and Statistics		
MATH 367	OProbability and Statistics with Applications		
CEE 3770	Statistics and Applications		
ISYE 3770	Statistics and Applications		
	2Probability with Applications Bland Basic Statistical Methods		
Free Electives			
Free Electives		8	
Total Credit H	ours	123	
Pass-fail only and CS 1100.	allowed for Free Electives (max 6 credit hours)		
<sup>2</sup> Two of three	rade of a C required. e lab sciences MUST be a sequence. gn Options are as follows (students must pick one o	ption	

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.

Bachelor of Science in Computer Science - Thread: Theory & Systems and Architecture

and may not change):

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

2

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-ip 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.

<sup>4</sup> Two credit hours of MATH 1554 may count along with MATH 2550 to give Field of Study 18 credit hours.