Department of Computer Science and Engineering

Program of Computer Science and Technology for International

Students (2024)

I. Introduction

Computer Science and Technology is an area with great market demand and potential, in an

acute shortage of fully developed talents. With the rapid development of data, information, and AI

technologies, which boost modern enterprises, the shortage will grow exponentially. Predictably,

those high-quality, innovative, interdisciplinary IT talents will be highly appreciated by the market

as the up-to-date computer technology grows intensive, ubiquitous, interdisciplinary, and

competitive.

Academic subject areas: Computer

Program code: 080901

II. Objectives and Learning Outcomes

1. Objectives

This major will cultivate high-quality computer science and technology talents with solid

theoretical foundations, modern system design principles, effective research and exploration

methods, and useful English and computer application skills, who are competent to the positions

from the design of computer systems to the development of computer applications.

2. Learning Outcomes

The graduates can continue the study in pursue of higher degrees or work in IT related

education, management, scientific research and industrial applications in universities, research

institutes, administrations, public sectors and industries.

III. Study Length, Degree, and Graduation Requirements

1. Study length: 4 years.

2. Degree conferred: Students who complete and meet the degree requirements of the

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undergraduate program will be awarded a bachelor's degree in Engineering

3. The minimum credit requirement for graduation: 148 credits. The specific requirements are as follows.

	M. J. L.	Color	Minimum
	Module	Category	Credit Requirement
	Chinese Language and Culture Module	Chinese Language and Culture	16
	Arts and Physical Education	Physical Education	4
	Module	Arts	2
	G 4 D 1	Computer Programming	3
	Competence Development Module	Writing	2
	Wodale	Foreign Languages	14
General Education	Humanities and Social Sciences Module	Humanities	6
Courses		Social Sciences	O
		Chinese Studies	2
		Mathematics	12
	Mathematics and Natural	Physics	10
	Sciences Module	Chemistry	3
		Geoscience + Life Science	3
	GE to Majors Bridging Module	Introduction to Majors	2
		Major Foundational Courses	21
	Major Required Courses	Major Core Courses	18
Major Courses	major required courses	Practice-based Learning (Undergraduate Thesis, Internships)	14
	Major Elective Courses	Major Elective Courses	16
	Total		148

Note: please see the General Education Requirement for more details on Chinese Language and Culture Module, Arts and Physical Education Module, Competence Development Module (Foreign Languages & Writing), Humanities and Social Sciences Module, and GE to Majors Bridging Module.

IV. Course Requirements for the Mathematics and Natural Sciences Module and Computer Programming

Course Category	Course Code	Course Name	Credits	Terms	Prerequisite	Dept.
	MA117	Calculus I	4	1 Fall	NA	
Mathematics	MA127	Calculus II	4	1Spr	Calculus I	MATH
	MA113	Linear Algebra	4	1 Spr/Fall	NA	
	PHY105	College Physics I	4	1 Fall	NA	
Physics	PHY106	PHY106 College Physics II		1Spr	College Physics I	PHY
	PHY104B	Experiments of Fundamental Physics	2	1-2 Spr/Fall	NA	
Chemistry	Chemistry.		3	1-2 Spr/Fall	NA	СНМ
Geoscience +	BIO102B	Introduction to Life Science	3	1-2 Spr/Fall	NA	BIO
Life Science	EOE100	Introduction to Earth Sciences	3	1-2 Spr/Fall	NA	ESS, OCE, ESE
Computer Programming	CS109	Introduction to Computer Programming	3	1-2 Spr/Fall	NA	CSE

Note:

- 1. Students can take Mathematical Analysis I II as an alternative to Calculus I II.
- 2. Students can take Advanced Linear Algebra I as an alternative to Linear Algebra.
- 3. Students can take General Physics I II as an alternative to College Physics I II.
- 4. Students can take General Chemistry as an alternative to Chemistry: the Central Science.
- 5. Students can take Introduction to Life Science or Introduction to Earth Sciences.
- 6. Students can take Principles of Biology as an alternative to Introduction to Life Science.
- 7. The above alternatives are also applicable to "Prerequisites for Major Declaration."

V. Prerequisites for Major Declaration

Major Declaration Time	Course Code	Course Name	Prerequisite
	MA117	Calculus I	NA
	MA127	Calculus II	Calculus I
	MA113	Linear Algebra	NA
Declare major at	PHY105	College Physics I	NA
the end of the	PHY106	College Physics II	College Physics I
first academic	PHY104B	Experiments of Fundamental Physics	NA
year	CH105	Chemistry: the Central Science	NA
	BIO102B/ EOE100	Introduction to Life Science/Introduction to Earth Sciences	NA
	CS109	Introduction to Computer Programming	NA
	MA117	Calculus I	NA
	MA127	Calculus II	Calculus I
	MA113	Linear Algebra	NA
Declare major at	PHY105	College Physics I	NA
the end of the	PHY106	College Physics II	College Physics I
second academic	PHY104B	Experiments of Fundamental Physics	NA
year	CH105	Chemistry: the Central Science	NA
	BIO102B/ EOE100	Introduction to Life Science/Introduction to Earth Sciences	NA
	CS109	Introduction to Computer Programming	NA

Note:

- 1. If the number of students entering a major at the end of the first academic year in the department is greater than or equal to the total number of the teaching-research faculty (PI)*2*60%, all majors in the department may implement the prerequisites for major declaration at the end of the second academic year.
- 2. If the number of students entering a major at the end of the first academic year in the department is less than the total number of the teaching-research faculty (PI)*2*60%, all majors in the department do not implement the prerequisites for major declaration at the end of the second academic year.
- 3. Suppose the number of students applying for a major at the end of the first academic year exceeds four times the total number of the teaching-research faculty (PI), then the department may select students according to predetermined rules. In principle, the rules set by the department shall examine the students' suitability for the major and not based on weighted GPA (Specific rules shall be set by the department and announced in advance).
- 4. For departments that do not implement prerequisites for major declaration at end of the second academic year, if the cumulative number of students applying for a major at the end of the second academic year and the number of students who have entered a major at the end of the first academic year exceeds four times the total number of the teaching-research faculty (PI), the department may select students according to predetermined rules. In principle, the rules set by the department shall examine the students' suitability for the major and not based on weighted GPA (Specific rules shall be set by the department and announced in advance).

VI: Major Course Arrangement

Table 1: Major Required Courses

Program of Computer Science and Technology

Course Category	Course Code	Course Name	Credits	Practice- based Learning Credits	Terms	Prerequisite	Dept.
>	CS203	Data Structures and Algorithm Analysis	3	1	2/Fall	CS109	CSE
1ajo	CS207	Digital Logic	3	1	2/Fall	NA	CSE
or Fou	STA219	Probability and Statistics for Engineering	3		2/Fall	MA127, MA113	STA
Major Foundational Courses	CS307	Principles of Database Systems	3	1	2/Fall	CS109	CSE
onal	CS201	Discrete Mathematics	3		2/Spr	MA127, MA113	CSE
Co	CS202	Computer Organization	3	1	2/Spr	CS207	CSE
urses	CS208	Algorithm Design and Analysis	3	1	2/Spr	CS203	CSE
		Total	21	5			

^{1.} Students can take Probability and Statistics as an alternative to Probability and Statistics for Engineering.

^{2.} Students can take Mathematical Statistics and Probability Theory as an alternative to Probability and Statistics for Engineering.

	CS323	Compilers	3	1	3 / Fall	CS219, CS202	CSE
Z.	CS305	Computer Networks	3	1	3 / Fall	CS109	CSE
Major	CS321	Group Projects I	2	2	3 / Fall	NA	CSE
Core	CS302	Operating Systems	3	1	3 / Spr	CS203, CS202	CSE
	CS304	Software Engineering	3	1	3 / Spr	CS203	CSE
Courses	CS326	Group Projects II	2	2	3 / Spr	NA	CSE
ses	CS413	Group Projects III	2	2	4 / Fall	NA	CSE
		Total	18	10			
P	CS470	Industrial Practice	2	2			
Practice- based Courses	CS491	Undergraduate Thesis/Projects	12	12			
ώ °	Total		14	14			
	Total			29			

Table 2: Major Elective Courses

Program of Computer Science and Technology

Course Code	Course Name	Credits	Practice- based Learning Credits	Terms	Prerequisite	Dept.
CS101A	Introduction to Computer Science A	2		1 / Fall	NA	CSE
CS106	Introduction to Cognitive Science	2		1 / Fall	NA	CSE
CS105	Lab of Introduction to Cognitive Science	1	1	1 / Fall	NA	CSE
CS104	Introduction to Mathematical Logic	2		1 / Spr	NA	CSE
CS209A	Computer System Design and Applications A	3	1	1 / Spr	CS109 or CS110	CSE
EE205	Signals and Systems	3	1	2 / Fall	MA117	EE
CS219	Advanced Programming	3	1	2 / Fall	CS109	CSE
MA305	Numerical Analysis	3		3 / Fall	MA203a or MA213-16	MATH
MA309	Time Series Analysis	3		3 / Fall	MA212 or MA204	STAT
EE323	Digital Signal Processing	3	1	3 / Fall	EE205	EE
CS303	Artificial Intelligence	3	1	3 / Fall	CS203, STA219	CSE
CS315	Computer Security	3	1	3 / Fall	CS109	CSE
CS325	Multi-Agent Systems	3	1	3 / Fall	CS203	CSE
CS327	The Theory of Computation	2		3 / Fall	CS101A, CS104	CSE
CS301	Embedded System and Microcomputer Principle	3	1	3 / Fall	CS207	CSE
CS309	Object-oriented Analysis and Design	3	1	3 / Fall	CS203	CSE
MA234	Introduction to Theoretical and Practical Data Science	4	1	3 / Spr	MA212	MATH
EE326	Digital Image Processing	3	1	3 / Spr	EE205	EE
CS308	Computer Vision	3	1	3 / Spr	CS203,MA127,MA1 13	CSE
CS306	Data Mining	3	1	3 / Spr	CS203 or CS203B	CSE
CS324	Deep Learning	3	1	3 / Spr	CS303	CSE
CS312	Computer Graphics	3	1	3 / Spr	NA	CSE
CS314	Internet of Things	3	1	3 / Spr	CS305	CSE
CS310	Natural Language Processing	3	1	3 / Spr	CS303	CSE
CS330	Multimedia Information Processing	3	1	3 / Spr	NA	CSE
CS332	Information Retrieval	3	1	3 / Spr	CS203	CSE
CS328	Distributed and Cloud Computing	3	1	3 / Spr	CS305	CSE
CS338	Introduction to Theory of Computation	3	1	3 / Spr	CS203	CSE
CS342	Optimization Methods	3	1	3 / Spr	NA	CSE
CS340	Computational Ethics	3	1	3 / Spr	CS303	CSE
CS401	Intelligent Robotics	3	1	3 / Spr	CS203, STA219	CSE
EE411	Information Theory and Coding	2		4 / Fall	MA212	EE
CS405	Machine Learning	3	1	4 / Fall	STA219	CSE

CS409	Software Testing	3	1	4 / Fall	CS304	CSE
CSE5005	Advanced Computer Networks and Big Data	3	1	4 / Fall	CS305	CSE
CSE5001	Advanced Artificial Intelligence	3	1	4 / Fall	CS303	CSE
CSE5019	Reinforcement Learning	3	1	4 / Fall	CS303	CSE
CSE5010	Wireless Network and Mobile Computing	3	1	4 / Fall	NA	CSE
CSE5003	Advanced Algorithms	3	1	4 / Fall	CS342	CSE
CSE5012	Evolutionary Computation and Its Applications	3	1	4 / Spr	CS303	CSE
CSE5022	Advanced Multi Agent Systems	3	1	4 / Spr	CS203, STA219	CSE
CSE5014	Cryptography and Network Security	2		4 / Spr	CS201, STA219, CS203	CSE
CS402	Frontier Seminars in Computer Science and Technology IV	1		4 / Spr	NA	CSE
	Total				·	·

Table 3: Overview of Practice-based Learning

Program of Computer Science and Technology

Course Code	Course Name	Credits	Practice- based Learning Credits	Terms	Prerequisite	Dept.
CS105	Lab of Introduction to Cognitive Science	1	1	1 / Fall	NA	CSE
CS209A	Computer System Design and Applications A	3	1	1 / Spr	CS109 or CS110	CSE
EE205	Signals and Systems	3	1	2 / Fall	MA117	EE
CS219	Advanced Programming	3	1	2 / Fall	CS109	CSE
CS203	Data Structures and Algorithm Analysis	3	1	2 / Fall	CS109	CSE
CS207	Digital Logic	3	1	2 / Fall	NA	CSE
CS307	Principles of Database Systems	3	1	2 / Fall	CS109	CSE
CS202	Computer Organization	3	1	2/ Spr	CS207	CSE
CS208	Algorithm Design and Analysis	3	1	2/ Spr	CS203	CSE
EE323	Digital Signal Processing	3	1	3 / Fall	EE205	EE
CS323	Compilers	3	1	3 / Fall	CS219, CS202	CSE
CS315	Computer Security	3	1	3 / Fall	CS109	CSE
CS325	Multi-Agent Systems	3	1	3 / Fall	CS203	CSE
CS301	Embedded System and Microcomputer Principle	3	1	3 / Fall	CS207	CSE
CS303	Artificial Intelligence	3	1	3 / Fall	CCS203, STA219	CSE
CS305	Computer Networks	3	1	3 / Fall	CS109	CSE
CS309	Object-oriented Analysis and Design	3	1	3 / Fall	CS203	CSE
CS321	Group Projects I	2	2	3 / Fall	NA	CSE
MA234	Introduction to Theoretical and Practical Data Science	4	1	3 / Spr	MA212	МАТН

CS304 Software Engineering 3		T		1			
CS326 Group Projects II 2 2 3/Spr NA CS308 Computer Vision 3 1 3/Spr CS203,MA127,MA113 CS306 Data Mining 3 1 3/Spr CS203 or CS203B CS324 Deep Learning 3 1 3/Spr CS303 CS312 Computer Graphics 3 1 3/Spr NA CS314 Internet of Things 3 1 3/Spr CS305 CS310 Natural Language Processing 3 1 3/Spr CS303 CS330 Multimedia Information 3 1 3/Spr CS303 CS331 Information Retrieval 3 1 3/Spr CS203 CS328 Distributed and Cloud Computing 3 1 3/Spr CS203 CS328 Distributed and Cloud Computation 3 1 3/Spr CS305 CS338 Interduction to Theory of Computation 3 1 3/Spr CS203 CS340	CS302	Operating Systems	3	1	3/ Spr	CS203, CS202	CSE
CS308 Computer Vision 3 1 3/ Spr CS203,MA127,MA113 CS306 Data Mining 3 1 3/ Spr CS203 or CS203B CS324 Deep Learning 3 1 3/ Spr CS303 CS312 Computer Graphics 3 1 3/ Spr NA CS314 Internet of Things 3 1 3/ Spr CS305 CS310 Natural Language Processing 3 1 3/ Spr CS303 CS330 Multimedia Information 3 1 3/ Spr CS303 CS332 Information Retrieval 3 1 3/ Spr CS203 CS328 Distributed and Cloud Computing 3 1 3/ Spr CS305 CS338 Introduction to Theory of Computation Methods 3 1 3/ Spr CS203 CS342 Optimization Methods 3 1 3/ Spr CS303 CS401 Intelligent Robotics 3 1 3/ Spr CS203 CS41	CS304	Software Engineering	3	1	3/ Spr	CS203	CSE
CS306 Data Mining 3 1 3/Spr CS203 or CS203B CS324 Deep Learning 3 1 3/Spr CS303 CS312 Computer Graphics 3 1 3/Spr NA CS314 Internet of Things 3 1 3/Spr CS305 CS310 Natural Language Processing 3 1 3/Spr CS303 CS330 Multimedia Information Processing 3 1 3/Spr CS303 CS332 Information Retrieval 3 1 3/Spr CS203 CS328 Distributed and Cloud Computing 3 1 3/Spr CS305 CS338 Introduction to Theory of Computation of Computing 3 1 3/Spr CS203 CS342 Optimization Methods 3 1 3/Spr CS203 CS401 Intelligent Robotics 3 1 3/Spr CS303 CS401 Intelligent Robotics 3 1 3/Spr CS203, STA219 <td< td=""><td>CS326</td><td>Group Projects II</td><td>2</td><td>2</td><td>3/ Spr</td><td>NA</td><td>CSE</td></td<>	CS326	Group Projects II	2	2	3/ Spr	NA	CSE
CS324 Deep Learning 3 1 3 / Spr CS303 CS312 Computer Graphics 3 1 3 / Spr NA CS314 Internet of Things 3 1 3 / Spr CS305 CS310 Natural Language Processing 3 1 3 / Spr CS303 CS330 Multimedia Information Processing 3 1 3 / Spr NA CS332 Information Retrieval 3 1 3 / Spr CS203 CS328 Distributed and Cloud Computing 3 1 3 / Spr CS305 CS338 Introduction to Theory of Computation 3 1 3 / Spr CS203 CS342 Optimization Methods 3 1 3 / Spr CS203 CS401 Intelligent Robotics 3 1 3 / Spr CS203, STA219 EE326 Digital Image Processing 3 1 3 / Spr EE205 CS413 Group Projects III 2 2 4 / Fall NA	CS308	Computer Vision	3	1	3/ Spr	CS203,MA127,MA113	CSE
CS312 Computer Graphics 3 1 3/ Spr NA CS314 Internet of Things 3 1 3/ Spr CS305 CS310 Natural Language Processing 3 1 3/ Spr CS303 CS330 Multimedia Information Processing 3 1 3/ Spr CS303 CS332 Information Retrieval 3 1 3/ Spr CS203 CS328 Distributed and Cloud Computing 3 1 3/ Spr CS305 CS338 Introduction to Theory of Computation 3 1 3/ Spr CS203 CS342 Optimization Methods 3 1 3/ Spr CS203 CS401 Intelligent Robotics 3 1 3/ Spr CS203, STA219 ES326 Digital Image Processing 3 1 3/ Spr CS203, STA219 ES413 Group Projects III 2 2 4 / Fall NA CS405 Machine Learning 3 1 4 / Fall CS304	CS306	Data Mining	3	1	3/ Spr	CS203 or CS203B	CSE
CS314 Internet of Things 3 1 3/Spr CS305 CS310 Natural Language Processing 3 1 3/Spr CS303 CS330 Multimedia Information Processing 3 1 3/Spr CS303 CS332 Information Retrieval 3 1 3/Spr CS203 CS328 Distributed and Cloud Computing 3 1 3/Spr CS305 CS328 Distributed and Cloud Computing 3 1 3/Spr CS305 CS338 Introduction to Theory of Computing 3 1 3/Spr CS305 CS342 Optimization Methods 3 1 3/Spr CS203 CS401 Intelligent Robotics 3 1 3/Spr CS303 CS401 Intelligent Robotics 3 1 3/Spr CS203, STA219 EE326 Digital Image Processing 3 1 3/Fall NA CS403 Group Projects III 2 2 4/Fall NA	CS324	Deep Learning	3	1	3 / Spr	CS303	CSE
CS310 Natural Language Processing 3 1 3/Spr CS303 CS330 Multimedia Information Processing 3 1 3/Spr NA CS332 Information Retrieval 3 1 3/Spr CS203 CS328 Distributed and Cloud Computing 3 1 3/Spr CS305 CS338 Introduction to Theory of Computation 3 1 3/Spr CS203 CS342 Optimization Methods 3 1 3/Spr CS203 CS401 Intelligent Robotics 3 1 3/Spr CS303 CS401 Intelligent Robotics 3 1 3/Spr CS203, STA219 EE326 Digital Image Processing 3 1 3/Spr EE205 CS413 Group Projects III 2 2 4/Fall NA CS405 Machine Learning 3 1 4/Fall CS304 CS409 Software Testing 3 1 4/Fall CS305 CSE5001	CS312	Computer Graphics	3	1	3/ Spr	NA	CSE
CS330 Multimedia Information Processing 3 1 3 / Spr NA CS332 Information Retrieval 3 1 3 / Spr CS203 CS328 Distributed and Cloud Computing 3 1 3 / Spr CS305 CS338 Introduction to Theory of Computation 3 1 3 / Spr CS203 CS342 Optimization Methods 3 1 3 / Spr CS203 CS340 Computational Ethics 3 1 3 / Spr CS303 CS401 Intelligent Robotics 3 1 3 / Spr CS203, STA219 EE326 Digital Image Processing 3 1 3 / Spr EE205 CS413 Group Projects III 2 2 4 / Fall NA CS405 Machine Learning 3 1 4 / Fall CS304 CS409 Software Testing 3 1 4 / Fall CS305 CS5005 Advanced Artificial Intelligence 3 1 4 / Fall CS303 <td>CS314</td> <td>Internet of Things</td> <td>3</td> <td>1</td> <td>3/ Spr</td> <td>CS305</td> <td>CSE</td>	CS314	Internet of Things	3	1	3/ Spr	CS305	CSE
CS330 Processing 3 1 3/Spr NA CS332 Information Retrieval 3 1 3/Spr CS203 CS328 Distributed and Cloud Computing 3 1 3/Spr CS305 CS338 Introduction to Theory of Computation 3 1 3/Spr CS203 CS342 Optimization Methods 3 1 3/Spr CS303 CS340 Computational Ethics 3 1 3/Spr CS303 CS401 Intelligent Robotics 3 1 3/Spr CS203, STA219 EE326 Digital Image Processing 3 1 3/Spr EE205 CS413 Group Projects III 2 2 4/Fall NA CS405 Machine Learning 3 1 4/Fall STA219 CS409 Software Testing 3 1 4/Fall CS304 CSE5005 Advanced Artificial Intelligence 3 1 4/Fall CS305 CSE5019	CS310 N	Natural Language Processing	3	1	3 / Spr	CS303	CSE
CS328 Distributed and Cloud Computing 3 1 3 / Spr CS305 CS338 Introduction to Theory of Computation 3 1 3 / Spr CS203 CS342 Optimization Methods 3 1 3 / Spr NA CS340 Computational Ethics 3 1 3 / Spr CS303 CS401 Intelligent Robotics 3 1 3 / Spr CS203, STA219 EE326 Digital Image Processing 3 1 3 / Spr EE205 CS413 Group Projects III 2 2 4 / Fall NA CS405 Machine Learning 3 1 4 / Fall STA219 CS409 Software Testing 3 1 4 / Fall CS304 CSE5005 Advanced Computer Networks and Big Data 3 1 4 / Fall CS305 CSE5001 Reinforcement Learning 3 1 4 / Fall CS303 CSE5019 Reinforcement Learning 3 1 4 / Fall NA <	CS330		3	1	3 / Spr	NA	CSE
CS328 Computing 3 1 3/Spr CS305 CS338 Introduction to Theory of Computation 3 1 3/Spr CS203 CS342 Optimization Methods 3 1 3/Spr NA CS340 Computational Ethics 3 1 3/Spr CS303 CS401 Intelligent Robotics 3 1 3/Spr CS203, STA219 EE326 Digital Image Processing 3 1 3/Spr EE205 CS413 Group Projects III 2 2 4/Fall NA CS405 Machine Learning 3 1 4/Fall CS304 CS409 Software Testing 3 1 4/Fall CS304 CSE5005 Advanced Computer Networks and Big Data 3 1 4/Fall CS305 CSE5001 Advanced Artificial Intelligence 3 1 4/Fall CS303 CSE5019 Reinforcement Learning 3 1 4/Fall NA CSE5010 <td>CS332</td> <td>Information Retrieval</td> <td>3</td> <td>1</td> <td>3 / Spr</td> <td>CS203</td> <td>CSE</td>	CS332	Information Retrieval	3	1	3 / Spr	CS203	CSE
CS338 Computation 3 1 3/Spr CS203 CS342 Optimization Methods 3 1 3/Spr NA CS340 Computational Ethics 3 1 3/Spr CS303 CS401 Intelligent Robotics 3 1 3/Spr CS203, STA219 EE326 Digital Image Processing 3 1 3/Spr EE205 CS413 Group Projects III 2 2 4/Fall NA CS405 Machine Learning 3 1 4/Fall STA219 CS409 Software Testing 3 1 4/Fall CS304 CSE5005 Advanced Computer Networks and Big Data 3 1 4/Fall CS305 CSE5001 Advanced Atificial Intelligence 3 1 4/Fall CS303 CSE5019 Reinforcement Learning 3 1 4/Fall NA CSE5010 Wireless Network and Mobile Computing 3 1 4/Fall NA CSE5012 </td <td>CS328</td> <td></td> <td>3</td> <td>1</td> <td>3 / Spr</td> <td>CS305</td> <td>CSE</td>	CS328		3	1	3 / Spr	CS305	CSE
CS340 Computational Ethics 3 1 3 / Spr CS303 CS401 Intelligent Robotics 3 1 3 / Spr CS203, STA219 EE326 Digital Image Processing 3 1 3 / Spr EE205 CS413 Group Projects III 2 2 4 / Fall NA CS405 Machine Learning 3 1 4 / Fall STA219 CS409 Software Testing 3 1 4 / Fall CS304 CSE5005 Advanced Computer Networks and Big Data 3 1 4 / Fall CS305 CSE5010 Advanced Artificial Intelligence 3 1 4 / Fall CS303 CSE5019 Reinforcement Learning 3 1 4 / Fall CS303 CSE5010 Wireless Network and Mobile Computing 3 1 4 / Fall NA CSE5012 Evolutionary Computation and Its Applications 3 1 4 / Spr CS303 CSE5022 Advanced Multi Agent Systems 3 1 <td< td=""><td>CS338</td><td></td><td>3</td><td>1</td><td>3 / Spr</td><td>CS203</td><td>CSE</td></td<>	CS338		3	1	3 / Spr	CS203	CSE
CS401 Intelligent Robotics 3 1 3/ Spr CS203, STA219 EE326 Digital Image Processing 3 1 3/ Spr EE205 CS413 Group Projects III 2 2 4/ Fall NA CS405 Machine Learning 3 1 4/ Fall STA219 CS409 Software Testing 3 1 4/ Fall CS304 CSE5005 Advanced Computer Networks and Big Data 3 1 4/ Fall CS305 CSE5001 Advanced Artificial Intelligence 3 1 4/ Fall CS303 CSE5019 Reinforcement Learning 3 1 4/ Fall CS303 CSE5010 Wireless Network and Mobile Computing 3 1 4/ Fall NA CSE5003 Advanced Algorithms 3 1 4/ Fall CS342 CSE5012 Evolutionary Computation and Its Applications 3 1 4/ Spr CS203, STA219 CSE5022 Advanced Multi Agent Systems 3 1	CS342	Optimization Methods	3	1	3 / Spr	NA	CSE
EE326 Digital Image Processing 3 1 3/ Spr EE205 CS413 Group Projects III 2 2 4/ Fall NA CS405 Machine Learning 3 1 4/ Fall STA219 CS409 Software Testing 3 1 4/ Fall CS304 CSE5005 Advanced Computer Networks and Big Data 3 1 4/ Fall CS305 CSE5001 Advanced Artificial Intelligence 3 1 4/ Fall CS303 CSE5019 Reinforcement Learning 3 1 4/ Fall CS303 CSE5010 Wireless Network and Mobile Computing 3 1 4/ Fall NA CSE5003 Advanced Algorithms 3 1 4/ Fall CS342 CSE5012 Evolutionary Computation and Its Applications 3 1 4/ Spr CS203, STA219 CS470 Industrial Practice 2 2 2 CS401 Undergraduate 12 12	CS340	Computational Ethics	3	1	3 / Spr	CS303	CSE
CS413 Group Projects III 2 2 4 / Fall NA CS405 Machine Learning 3 1 4 / Fall STA219 CS409 Software Testing 3 1 4 / Fall CS304 CSE5005 Advanced Computer Networks and Big Data 3 1 4 / Fall CS305 CSE5001 Advanced Artificial Intelligence 3 1 4 / Fall CS303 CSE5019 Reinforcement Learning 3 1 4 / Fall CS303 CSE5010 Wireless Network and Mobile Computing 3 1 4 / Fall NA CSE5003 Advanced Algorithms 3 1 4 / Fall CS342 CSE5012 Evolutionary Computation and Its Applications 3 1 4 / Spr CS303 CSE5022 Advanced Multi Agent Systems 3 1 4 / Spr CS203, STA219 CS470 Industrial Practice 2 2 Undergraduate 12 12	CS401	Intelligent Robotics	3	1	3/ Spr	CS203, STA219	CSE
CS405 Machine Learning 3 1 4 / Fall STA219 CS409 Software Testing 3 1 4 / Fall CS304 CSE5005 Advanced Computer Networks and Big Data 3 1 4 / Fall CS305 CSE5001 Advanced Artificial Intelligence 3 1 4 / Fall CS303 CSE5019 Reinforcement Learning 3 1 4 / Fall CS303 CSE5010 Wireless Network and Mobile Computing 3 1 4 / Fall NA CSE5003 Advanced Algorithms 3 1 4 / Fall CS342 CSE5012 Evolutionary Computation and Its Applications 3 1 4 / Spr CS303 CSE5022 Advanced Multi Agent Systems 3 1 4 / Spr CS203, STA219 CS470 Industrial Practice 2 2 CS491 Undergraduate 12 12	EE326	Digital Image Processing	3	1	3/ Spr	EE205	EE
CS409 Software Testing 3 1 4 / Fall CS304 CSE5005 Advanced Computer Networks and Big Data 3 1 4 / Fall CS305 CSE5001 Advanced Artificial Intelligence 3 1 4 / Fall CS303 CSE5019 Reinforcement Learning 3 1 4 / Fall CS303 CSE5010 Wireless Network and Mobile Computing 3 1 4 / Fall NA CSE5003 Advanced Algorithms 3 1 4 / Fall CS342 CSE5012 Evolutionary Computation and Its Applications 3 1 4 / Spr CS303 CSE5022 Advanced Multi Agent Systems 3 1 4 / Spr CS203, STA219 CS470 Industrial Practice 2 2 CS491 Undergraduate 12 12	CS413	Group Projects III	2	2	4 / Fall	NA	CSE
CSE5005 Advanced Computer Networks and Big Data 3 1 4 / Fall CS305 CSE5001 Advanced Artificial Intelligence 3 1 4 / Fall CS303 CSE5019 Reinforcement Learning 3 1 4 / Fall CS303 CSE5010 Wireless Network and Mobile Computing 3 1 4 / Fall NA CSE5003 Advanced Algorithms 3 1 4 / Fall CS342 CSE5012 Evolutionary Computation and Its Applications 3 1 4 / Spr CS303 CSE5022 Advanced Multi Agent Systems 3 1 4 / Spr CS203, STA219 CS470 Industrial Practice 2 2 CS491 Undergraduate 12 12	CS405	Machine Learning	3	1	4 / Fall	STA219	CSE
CSE5005 Networks and Big Data 3 1 4 / Fall CS305 CSE5001 Advanced Artificial Intelligence 3 1 4 / Fall CS303 CSE5019 Reinforcement Learning 3 1 4 / Fall CS303 CSE5010 Wireless Network and Mobile Computing 3 1 4 / Fall NA CSE5003 Advanced Algorithms 3 1 4 / Fall CS342 CSE5012 Evolutionary Computation and Its Applications 3 1 4 / Spr CS303 CSE5022 Advanced Multi Agent Systems 3 1 4 / Spr CS203, STA219 CS470 Industrial Practice 2 2 CS491 Undergraduate 12 12	CS409	Software Testing	3	1	4 / Fall	CS304	CSE
CSE5001 Intelligence 3 1 4 / Fall CS303 CSE5019 Reinforcement Learning 3 1 4 / Fall CS303 CSE5010 Wireless Network and Mobile Computing 3 1 4 / Fall NA CSE5003 Advanced Algorithms 3 1 4 / Fall CS342 CSE5012 Evolutionary Computation and Its Applications 3 1 4 / Spr CS303 CSE5022 Advanced Multi Agent Systems 3 1 4 / Spr CS203, STA219 CS470 Industrial Practice 2 2 CS491 Undergraduate 12 12	CSE5005		3	1	4 / Fall	CS305	CSE
CSE5010 Wireless Network and Mobile Computing 3 1 4 / Fall NA CSE5003 Advanced Algorithms 3 1 4 / Fall CS342 CSE5012 Evolutionary Computation and Its Applications 3 1 4 / Spr CS303 CSE5022 Advanced Multi Agent Systems 3 1 4 / Spr CS203, STA219 CS470 Industrial Practice 2 2 CS491 Undergraduate 12 12	CSE5001		3	1	4 / Fall	CS303	CSE
CSE5010 Mobile Computing 3 1 4 / Fall NA CSE5003 Advanced Algorithms 3 1 4 / Fall CS342 CSE5012 Evolutionary Computation and Its Applications 3 1 4 / Spr CS303 CSE5022 Advanced Multi Agent Systems 3 1 4 / Spr CS203, STA219 CS470 Industrial Practice 2 2 CS491 Undergraduate 12 12	CSE5019	Reinforcement Learning	3	1	4 / Fall	CS303	CSE
CSE5012 Evolutionary Computation and Its Applications 3 1 4 / Spr CS303 CSE5022 Advanced Multi Agent Systems 3 1 4 / Spr CS203, STA219 CS470 Industrial Practice 2 2 CS491 Undergraduate 12 12	CSE5010		3	1	4 / Fall	NA	CSE
CSE3012 and Its Applications 3 1 4 / Spr CS303 CSE5022 Advanced Multi Agent Systems 3 1 4 / Spr CS203, STA219 CS470 Industrial Practice 2 2 CS491 Undergraduate 12 12	CSE5003	Advanced Algorithms	3	1	4 / Fall	CS342	CSE
CSE3022 Systems 3 1 4 / Spr STA219 CS470 Industrial Practice 2 2 CS491 Undergraduate 12 12	CSE5012		3	1	4 / Spr	CS303	CSE
CS401 Undergraduate 12 12	CSE5022		3	1	4 / Spr		CSE
	CS470	Industrial Practice	2	2			
THESIS/FTOJECTS	CS491	Undergraduate Thesis/Projects	12	12			
Total 148 63		Total	148	63			

Curriculum Structure of Computer Science and Technology

Curriculum Structure of Computer Science and Technology Major The second year The third year The fourth year The first year Fall Spring **Spring** Fall Fall **Spring** Spring Fall Frontier Seminars Machine Computer Computer Operating Digital Logic in Computer Science Organization Learning Networks Systems and Technology IV Software Data Structures Algorithm Software Testing Compilers and Algorithm Design and Engineering Analysis Analysis Intelligent Object-oriented Probability and Robotics Discrete Analysis and Statistics for Mathematics Design Engineering Computer Graphics Embedded System Principles of Introduction to Computer System Database and Microcomputer Computer Design and Principle Systems Applications A Science A Data Mining Introduction to Computer Advanced Introduction to Mathematical Security Programming Cognitive Science Internet of Logic Things Artificial Intelligence Deep Learning Computer Vision Industrial Undergraduate Group Projects I II III Practice Thesis/Projects Major Required Courses Major Elective Courses Major Practice Courses