

UNDERGRADUATE CONSTRAINED ELECTIVES

ALGORITHMS AND COMPLEXITY

15455*	Undergraduate Complexity Theory
21301	Combinatorics
21484	Graph Theory

LOGICS AND LANGUAGES

15312*	Foundations of Programming Languages
15424*	Foundations of Cyber-Physical Systems
80311	Undecidability and Incompleteness

SYSTEMS

15410*	Operating System Design and Implementation
15418*	Parallel Computer Architecture and Programming
15440*	Distributed Systems

APPLICATIONS

02510*	Computational Genomics
05391*	Designing Human Centered Software
10401*	Introduction to Machine Learning (or 10-601)
11411*	Natural Language Processing
15323*	Computer Music Systems and Information Processing
15462*	Computer Graphics
16385*	Computer Vision

UNDERGRADUATE SCS ELECTIVES

in addition to SCS courses marked * above

02319	Genomics and Epigenetics of the Brain
02518	Computational Medicine
05320	Social Web
05418	Design Educational Games
05432	Personalized Online Learning
05434/11344	Machine Learning in Practice
05436/08534	Usable Privacy and Security
05438	The Role of Technology in Learning in the 21 st Century
05499	Special Topics in HCI
08303	Special Topic: Cryptocurrencies, Blockchains and Applications
08421	Building User-Focused Sensing Systems
08540	Green Computing
11423	ConLanging: Learning Linguistics and Language Tech. via Constructed Artificial Lang.
11441	Machine Learning for Text Mining
11442	Search Engines
15214	Principles of Software Construction: Objects, Design and Concurrency
15292	Special Topic: History of Computing (Mini-3; 5 units)**
15295	Competition Programming and Problem Solving (5 units)**
15296	Special Topic: Images of Computing (Mini-4; 5 units)**
15316	Software Foundations of Security and Privacy
15319	Cloud Computing
15365	Experimental Animation
15386	Neural Computation
15394	Intermediate Rapid Prototyping (Mini-3 and Mini-4; 5 units)**
15400	Research Practicum in Computer Science
15413	Software Engineering Practicum
15417	HOT Compilation
15437	Web Application Development
15464	Technical Animation
15494	Cognitive Robotics: The Future of Robot Toys
15503	Special Topic: Introduction to Theoretical Cryptography
16264	Humanoids
16299	Introduction to Feedback Control Systems
16311	Introduction to Robotics
16350	Planning Techniques for Robotics
16423	Designing Computer Vision Apps
16455	Human-Machine Virtuosity
17355	Program Analysis

**NOTE: Courses less than 9 units should be paired together to form a full SCS elective of at least 9 units.