CSE Graduate Course Structure - PhD List

PhD students must pass a total of nine letter-graded courses from a list of courses that is maintained by CSE Gradcom. Four of these course must be taken from four different areas. Students' advisors must approve their students' course selection. Students must also pass the 1-credit seminar CSE 292.

Artificial Intelligence
CSE 250A Principles of AI: Probabilistic Reasoning and Learning
CSE 250B Principles of AI: Learning Algorithms
CSE 250C Machine Learning Theory
CSE 253 Neural Networks
CSE 254 Statistical Learning
CSE 255 Intelligent Systems
CSE 258 Data Mining and Predictive Analytics

Bioinformatics
CSE 280A Algorithms and Computational Biology
CSE 282 Bioinf II: Seq & Struct Analys
CSE 283 Bioinf III:Functional Genomics
CSE 284 Personal Genomics for Bioinformaticians
MATH 283 Statistical Methods in Bioinformatics

Computer Engineering
CSE 240A Princ/Computer Architecture
CSE 240B Advanced Computer Architecture
CSE 240C Advanced Microarchitecture
CSE 240D Application-Specific Architectures
CSE 237A Introduction to Embedded Computing
CSE 237B Software for Embedded Systems
CSE 237C Validation and Testing of Embedded Systems
CSE 237D Design Automation and Prototyping for Embedded Systems
CSE 241A/ECE260B VLSI Integrated Circuits and Systems Design

CSE 243A Introduction to Synthesis Methodologies in VLSI CAD
CSE 244A VLSI Test
CSE 245 Computer Aided Circuit Simulation and Verification
CSE 248 Algrthmc&Optmztn Fdns VLSI CAD
ECE 260A VLSI Digital System Algorithms and Architectures
ECE 260C VLSI Advanced Topics
ECE 284 Special Topics in Computer Engineering

Computer Systems and Security
CSE 221 Operating Systems
CSE 222A Computer Communication Networks
CSE 222B Internet Algorithmics
CSE 223B Distributed Computing & Systems
CSE 224 Graduate Networked Systems
CSE 227 Computer Security
CSE 260 Parallel Computation
CSE 262 System Support for Applications of Parallel Computation

Database Systems
CSE 232 Principles/Database Systems
CSE 232B Database System Implementation
CSE 233 Database Theory

Graphics & Vision
CSE 252A Computer Vision I
CSE 252B Computer Vision II
CSE 252C Modern Computer Vision
CSE 272 Advanced Image Synthesis
CSE 274 Selected Topics in Graphics

Human-computer Interaction
CSE 216 Human-Computer Interaction
COGS 220 Information Visualization
COGS 231 Design Seminar on Human-Centered Programming

Programming Languages, Compilers, and Software Engineering
CSE 210 Principle/Software Engineering
CSE 218 Adv Topic/Software Engineering
CSE 230 Principles/Program Languages
CSE 231 Advanced Compiler Design

Robotics
CSE 276A Introduction to Robotics
CSE 276B Human Robot Interaction
CSE 276C Mathematics for Robotics
CSE 276D Healthcare Robotics

Theoretical Computer Science
CSE 200 Computability and Complexity
CSE 201A Advanced Complexity
CSE 202 Algorithm Design and Analysis
CSE 203A Advanced Algorithms
CSE 203B Convex Optimization
CSE 205A Logic in Computer Science
CSE 206A Lattice Algorithms & Applications
CSE 207 Cryptography & Network Security
CSE 208 Advanced Cryptography

*Topics
CSE 291*Topics in Computer Science and Engineering

*Regarding CSE 291s: Only eight units of letter-graded CSE 291 coursework may be applied to the elective requirements. CSE 291s may not be used to fulfill the breadth requirement. Requests to apply CSE 291s towards the coursework requirements are subject to advisor approval.