Number (old)	Title	Old Course Area (before July 2019)	New Course Area (after June 2019)
601.329/429/629	Functional Programming in Software Engineering		Software
601.350 (600.340)	Genomic Data Science (formerly Intro to Genomic Research)		Applications
601.365 (600.365)	Knowledge Discovery from Text	Applications	Applications
601.414/614 (600.344/444)	Computer Networks	Systems	Systems
601.315/415/615 (600.315/415)	Databases (formerly Database Systems)	Systems	Software
601.317/417/617 (600.337/437)	Distributed Systems	Systems	Systems
601.318/418/618 (600.318/418)	Operating Systems	Systems	Systems
601.419/619	Cloud Computing	Systems	Systems
601.320/420/620 (600.320/420)	Parallel Programming	Systems	[Software <= F20] Systems >= S21
601.421/621 (600.321/421)	Object-Oriented Software Engineering	Systems & Applications	Software
601.422/622	Software Testing & Debugging	Systems	Software
601.424/624	Reliable Software Systems	(Systems)	Systems
601.325/425/625 (600.325/425)	Declarative Methods	Analysis	Reasoning
601.426/626 (600.426)	Principles of Programming Languages	Analysis	Theory
601.427/627	Principles of Programming Languages II	Analysis	Theory
601.328/428/628 (600.328/428)	Compilers and Interpreters	Systems	Software
601.430/630 (600.470)	Combinatorics and Graph Theory in CS	Analysis	Theory
601.433/633 (600.363/463)	Intro Algorithms/Algorithms I	Analysis	Theory
601.434/634 (600.464/664)	Randomized & Big Data Algorithms	Analysis	Theory
601.435/635 (600.469/669)	Approximation Algorithms	Analysis	Theory
601.436/636 (600.473)	Algorithmic Game Theory	Analysis	Theory
601.437/637	Federated Learning & Analytics	Analysis	Reasoning
601.340/440/640	Web Security	Systems	[Software <= F20] Systems >= S21
601.441/641 (600.451)	Blockchains & Cryptocurrencies	Analysis	Theory
601.442/642 (600.442)	Modern Cryptography	Analysis	Theory
601.443/643 (600.443)	Security & Privacy	Applications	Software
601.444 (600.424)	Network Security	Systems	Software
601.445/645 (600.454)	Practical Cryptographic Systems	Systems	Software
601.446/646	Sketching & Indexing for Sequences	Analysis	Theory
601.447/647 (600.439/639)	Computational Genomics: Sequences	Applications	Applications

Number (old)	Title	Old Course Area (before July 2019)	New Course Area (after June 2019)
601.448/648 (600.438/638)	Computational Genomics: Data Analysis	Applications	Applications
601.452	Computational Biomedical Research	**(no area designation)**	
601.454/654 (600.484/684)	[Medical] Augmented Reality	Applications	Applications
601.455/655 (600.445/645)	Computer Integrated Surgery I	Applications	Applications
601.456/656 (600.446/646)	Computer Integrated Surgery II	Applications	Applications
601.457/657 (600.357/457)	Computer Graphics	Applications	Applications
601.459/659 (600.459/659)	Computational Geometry	Analysis	Theory
601.461/661 (600.361/461/661)	Computer Vision	Applications	Applications
601.463/663 (600.336/436/636)	Algorithms for Sensor-Based Robotics	Analysis	Applications
601.464/664 (600.335/435)	Artificial Intelligence	Applications	Reasoning
601.465/665 (600.465)	Natural Language Processing	Applications	Applications
601.466/666 (600.466)	Information Retrieval and Web Agents	Applications	Applications
601.467/667	Introduction to Human Language Technology	Applications	Applications
601.468/668 (600.468)	Machine Translation	Applications	Applications
601.474/674	ML: Learning Theory	Analysis	Theory
601.475/675 (600.475)	Machine Learning	Analysis & Applications	Reasoning
601.476/676 (600.476/676)	Machine Learning: Data to Models (in Complex Domains)	Analysis & Applications	Reasoning
601.477/677 (600.477/677)	Causal Inference	Analysis	Reasoning
601.479/679 (600.479/679)	Machine Learning: Representation Learning	Analysis & Applications	Reasoning
601.481/681	Machine Learning: Optimization	Analysis & Applications	Reasoning
601.482/682	Machine Learning: Deep Learning	Applications	Reasoning
AS.050.375/675 (601/600.485/685)	Probabilistic Models of the Visual Cortex	Analysis & Applications	Applications
601.486/686	ML: Artificial Intelligence System Design and Development	Applications	Software
580.488/688 (601/600.488/688)	Foundations of Computational Biology and Bioinformatics II	Analysis	Applications
601.490/690	Intro to Human-Computer Interaction	Applications	Software
601.491/691	Human-Robot Interaction	Applications	Applications
601.631 (600.471)	Theory of Computation	Analysis	Theory
601.714 (600.644)	Advanced Computer Networks	Systems	Systems
601.717 (600.667)	Advanced Distributed Systems	Systems	Systems

Number (old)	Title	Old Course Area (before July 2019)	New Course Area (after June 2019)
601.718	Advanced Operating Systems	Systems	Systems
601.723 (600.624)	Advanced Topics in Data-Intensive Computing	Systems	Systems
601.730 (600.670)	Pseudorandomness and Combinatorial Constructions	Analysis	Theory
601.740	Language-based Security	(Systems)	Systems
601.742	Advanced Topics in Secure and Censorship-Resistant Communicaitons	(Systems)	Systems
601.742 (600.642)	Advanced Topics in Cryptography	Analysis	Theory
601.743 (600.643)	Advanced Topics in Computer Security	Systems & Applications	Applications
601.745	Advanced Topics in Applied Cryptography	Analysis & Applications	Theory
601.749 (600.649)	Computational Genomics: Applied Comparative Genomics	Applications	Applications
601.750 (600.640)	Frontiers of Sequencing Data Analysis	Applications	Applications
601.751 (600.641)	Advanced Topics in Genomic Data Analysis		Applications
601.760 (600.660)	FFT in Graphics & Vision	Analysis & Applications	Applications
601.765 (600.665)	Machine Learning: Linguistic & Sequence Modeling	Analysis & Applications	Reasoning
520.666 (601.766/600.666)	Information Extraction	Applications	Applications
601.767	Deep Learning for Automated Discourse		Applications
601.769 (600.625)	Event Semantics in Theory and Practice	Applications	Applications
601.775 (600.675)	Machine Learning: Foundations (formerly Statistical Machine Learning)	Analysis & Applications	Reasoning
601.778 (600.678)	Adv Topics in Causal Inference	Analysis	Reasoning
601.779	Machine Learning: Advanced Topics	Analysis	Reasoning
601.780 (600.692-was 675)	Unsupervised Learning: from Big Data to Low-Dimensional Representations (was Adv Topics in ML)	Applications	Reasoning
601.783 (600.683)	Vision as Bayesian Inference	Analysis & Applications	Applications

These Engineering for Professionals courses have been approved for the CS program. Noted equivalencies in the course number column means you can't take both the EP course and our equivalent course for credit towards your degree program.			
605.601	Foundations of Software Engineering		Software
605.611	Foundations of Computer Architecture		Systems
605.612 == 601.418/618	Operating Systems		Systems
605.620	Algorithms for Bioinformatics		Applications

Number (old)	Title	Old Course Area (before July 2019)	New Course Area (after June 2019)
605.621 == 601.433/633	Foundations of Algorithms		Theory
605.625 == 601.476/676	Probabilistic Graphical Models		Reasoning
605.635 == 601.419/619	Cloud Computing		Systems
605.641 == 601.415/615	Principles of Database Systems		Software
605.645 == 601.464/664	Artifical Intelligence		Reasoning
605.647	Neural Networks		Reasoning
605.649 == 601.475/675	Introduction to Machine Learning		Reasoning
605.704	Object-Oriented Analysis and Design		Software
605.724 == 601.436/636	Applied Game Theory		Theory
605.728	Quantum Computation		Theory
605.741	Large-Scale Database Systems		Systems
605.746	Advanced Machine Learning		Reasoning
605.751	Algorithms for Structural Bioinformatics		Applications
605.772 == 601.444/644	Network and Security Management		Software

These older courses will be assigned new numbers & area designators when/if they are offered again.			
(600.316/416)	Database Systems (formerly TSP)	Systems	
(600.319/419)	Storage Systems (last offered 2008)	Systems	
(600.323/423)	Data Intensive Computing	Systems	
(600.427)	Data Organization: Storage & External Memory Systems	Systems	
(600.441/641)	Machine Learning for Genomic Data	Applications	
(600.450)	Network Embedded Systems & Sensor Networks	Systems	
(600.460)	Software Vulnerability Analysis	Applications	
(600.472)	Theoretical Cryptography	Analysis	
(600.478)	Visual Imaging in Surgery & Medicine	Applications	
(600.615)	Big Data,Small Languages, Scalable Systems	Systems	
(600.617)	Data Stream Processing	Systems	
(600.619)	Advanced Storage & Transaction Processing	Systems	
(600.620)	External Memory Data Structures and Algorithms	Analysis & Systems	
(600.629)	Wireless Networks	Systems	
(600.630)	Computer Vision Seminar	Applications	

Number (old)	Title	Old Course Area (before July 2019)	New Course Area (after June 2019)
(600.657)	Advanced Topics for Computer Graphics	Applications	
(600.658)	Suvery of Methods in Computer Graphics [Shape Analysis & Retrieval]	Applications	
(600.663)	Pattern Matching Algorithms	Analysis	
(600.668)	Advanced Topics in Software Security	Systems	
(600.671)	Special Topics on Bio-Nano Computing	Applications	
(600.672)	Advances in Computational Complexity	Analysis	
(600.681)	Adv Topics in Computer Vision	Applications	
601.427 (600.430)	Ontologies and Knowledge Representation	Analysis	Reasoning
601.658 (600.756)	Introduction to Geometry Processing	(no area designation)	
601.782 (600.682)	Deep Learning for Image Understanding	Applications	
580.689	Computational Personal Genomics	Applications	Applications

AT MOST ONE OF THE BELOW COURSES MAY BE APPLIED TOWARD THE 6 CORE COURSES REQUIREMENT FOR GRADUATE PROGRAMS (Undergrads should see the "CS other" policy about counting up to 6 credits from this list and others as well.)

520.447/647	Information Theory	Analysis	no designator
520.412/612	Machine Learning for Signal Processing (added 2018)	Analysis	no designator
520.629	Networked Dynamical Systems	Analysis	no designator
553.761 (550.661)	Non-linear Optimization I (Foundations of Optimization)	Analysis	no designator
553.762 (550.662)	Non-linear Optimization II (Optimization Algorithms)	Analysis	no designator
553.763 (550.663)	Stochastic Search and Optimization	Analysis	no designator
553.765 (550.665)	Convex Optimization (added 2017)	Analysis	no designator
553.766 (550.666)	Combinatorial Optimization	Analysis	no designator
553.672 (550.672)	Graph Theory	Analysis	no designator