Computer Science Masters and Ph.D Program Curriculum

Mandatory°	Theory†	AI*	Data and Info.*	Applications*	Systems*
All courses required	One course required	Three courses required. At least three categories must be selected.			
Responsible Conduct of Research (INT 601)	Algorithms (COS 554)	Interpretability & Explainability in Machine Learning (COS 598)	Statistical Foundations of Data Science (DSE 501 Currently COS 598)	Simulation and Modeling (COS 515)	Software Engineering (COS 520)
Introduction to Graduate Research (SIE 501)	Theoretical Computer Science (COS 550)	Topics in AI (COS 570)	Topics in Database Management (COS 580)	HCI (SIE 515)	Cybersecurity (COS 530)
Research Methods (SIE 502)		Machine Learning (COS 575 Currently COS 598)	Information Privacy Engineering (COS 535)	Image Processing and Analysis (COS 598)	Computer Networks (COS 540)
**Graduate Seminar (SIE 693)		Computer Vision (COS 573)	Data Visualization (COS 565)		Cloud Computing (COS 542)
			Intro to Data Science (COS 598)		
			Ontology Engineering Theory and Practice (SIE 580)		
			Privacy in Machine Learning (COS 598)		

Table 1 – Topics of required courses that represent the UMaine Computer Science Primary Doctoral Curriculum. All courses from the leftmost column are required. One course is required from the second column from the left. Three graduate level courses must be selected from four of the remaining columns. This table is intended to represent the topics covered under the different categories. UMaine SCIS is working to broaden its course offerings across all the categories. Existing and planned courses are listed by number; some courses are taught as *Advanced Topics in Computer Science* and are given the COS 598 designation.

°indicates all courses in this category are required for the COS Ph.D. program (four credit hours).

†indicates one course from this category is required for the COS Ph.D. program (three credit hours).

*indicates one course from three of four categories required for the COS Ph.D. program. Three graduate-level Computer Science breadth courses must be selected from four Breadth categories (at least three categories must be represented).

**indicates the one additional course required for the Ph.D. program. All other courses are required for the COS M.S. program.

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