University of Illinois at Urbana-Champaign
Professional MCS-DS Degree Program Requirements
Student Planning Worksheet

Name:

Must maintain an **overall 3.0 GPA**	
Degree must be completed within 5 years	
Complete **32 Credit Hours**	
Breadth Requirement (12-16 hrs) - Total Credit Hours Completed	
Advanced Coursework (12 hrs) - Total Credit Hours Completed	
Additional Coursework (4-8 hrs) - Total Credit Hours Completed	
Total Credit Hours Completed	

BREADTH REQUIREMENTS: 12-16 credit hours

*Must complete **at least one course from each area** with a grade of **B- or higher.** (Accompanying MOOC courses are listed within parenthesis after the High-Engagement course title)*

	CREDIT	GRADE	COMMENTS
Artificial Intelligence			
CS 441 Applied Machine Learning	4		
CS 445 Computational Photography	4		
CS 447 Natural Language Processing	4		
CS 598 Deep Learning for Healthcare [Recommended prereq: CS 441]* (Deep Learning for Healthcare)	4		
Database and Information Systems: Data Mining			
CS 410 Text Information Systems (Text Retrieval & Search Engines + Text Mining & Analytics)	4		
CS 411 Database Systems	4		
CS 412 Intro to Data Mining (Pattern Discovery + Cluster Analysis)	4		
Interactive Computing (HCI/Graphics)			
CS 416 Data Visualization (Data Visualization)	4		
CS 519 Scientific Visualization [Recommended prereq: CS 416 or CS 418]*	4		
Systems & Networking: Cloud Computing			
CS 425 Distributed Systems (Cloud Computing Concepts: Parts 1 & 2)	4		
CS 435 Cloud Networking (Cloud Networking)	4		
CS 437 Internet of Things (Hands-on Internet of Things)	4		
CS 498 Cloud Computing Applications (Cloud Computing Applications: Parts 1 & 2)	4		
Total Credit Hours from Breadth Coursework - 12-16 credit hours			

ADVANCED COURSEWORK: 12 credit hours *(Any three courses from the list below; Grades must be **C or higher**)*

500-LEVEL Courses (500-590 or 598)	CREDIT	GRADE	COMMENTS
HCI / Graphics			
CS 519 Scientific Visualization [Recommended prereq: CS 416 or CS 418]*	4		
Statistical Analysis			
CS 598 Advanced Bayesian Modeling	4		
Machine Learning			
CS 598 Practical Statistical Learning [Required prereq: CS 410, CS 412, an Artificial Intelligence breadth course, or STAT 420]	4		
CS 598 Deep Learning for Healthcare [Recommended prereq: CS 441]* (Deep Learning for Healthcare)	4		
Information Science			
CS 513 Theory & Practice of Data Cleaning	4		
CS 598 Foundations of Data Curation	4		
Capstone Courses			
CS 598 Data Mining Capstone [Required prereqs: CS 410 and CS 412]	4		
CS 598 Cloud Computing Capstone [Required prereqs: CS 498 Cloud Computing Applications and one other Cloud Computing breadth course]	4		
Total Credit Hours from Advanced Coursework - 12 credit hours			

ADDITIONAL COURSEWORK: 4-8 hours *(Any course from the list below; Grade must be **C or higher**)*

	CREDIT	GRADE	COMMENTS
CS 418 Interactive Computer Graphics	4		
CS 421 Programming Languages and Compilers	4		
CS 427 Software Engineering I	4		
CS 450 Numerical Analysis	4		
CS 463 Computer Security II	4		
CS 484 Parallel Programming	4		
STAT 420 Methods of Applied Statistics- Statistical Modeling in R	4		
Or any other course from "Breadth Requirements" or "Advanced Coursework" listed above.			
	4		
Total Credit Hours from Additional Coursework- 4-8 credit hours			

* If CS 519 or CS 598 DLH is applied toward both the breadth and advanced coursework requirements, then 8 hours of "Additional Coursework" is required.