

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

Name: \_\_\_\_\_ COMMENTS: \_\_\_\_\_

Must maintain an <b>overall 3.0 GPA</b>	
Degree must be completed within 5 years	
Complete <b>32 Credit Hours</b>	
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	
<b>Total Credit Hours Completed</b>	

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

**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
<b>HCI / Graphics</b>			
CS 519 Scientific Visualization [Recommended prereq: CS 418 or CS 498 Data Visualization]*	4		
<b>Statistical Analysis</b>			
CS 598 Advanced Bayesian Modeling	4		
<b>Machine Learning</b>			
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 498 Applied Machine Learning]*	4		
<b>Information Science</b>			
CS 513 Theory & Practice of Data Cleaning (Theory & Practice of Data Cleaning)	4		
CS 598 Foundations of Data Curation (Foundations of Data Curation)	4		
<b>Capstone Courses</b>			
CS 598 Data Mining Capstone [Required prereq: CS 410 and CS 412]	4		
CS 598 Cloud Computing Capstone [Required prereq: CS 498 Cloud Computing Applications and one other Cloud Computing breadth course]	4		
<b>Total Credit Hours from Advanced Coursework - 12 credit hours</b>			

**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 484 Parallel Computing	4		
STAT 420 Methods of Applied Statistics	4		
<b>Or any other course from "Breadth Requirements" or "Advanced Coursework" listed above.</b>			
	4		
<b>Total Credit Hours from Additional Coursework- 4-8 credit hours</b>			

\* 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.