The Masters Program in Computer Science (MPCS) at the University of Chicago is a professionally-oriented Masters in Computer Science degree in applied computing. The program combines the foundations of computer science with the applied skills necessary for careers in software engineering, mobile computing, data analytics, and high-performance computing. This is a course-based masters program with no research component, no advisors are assigned, and a thesis is not required.

The MPCS offers a 12-course program of study which includes core classes in Programming, Algorithms and Systems, elective coursework in applied technologies, and specializations courses in Software Engineering, High Performance Computing, Data Analytics and Mobile Computing.

Students in the 12-course program will have the following degree requirements:

1. Complete 6 core courses
   - (1) Algorithms course
   - (1) Programming course
   - (3) Computer Systems, Networks and Architectures courses
   - (1) Additional Algorithms or Systemscore course, or a practicum course.

Following are the courses that satisfy each core area:

**Algorithms:**
- MPCS 55001 Algorithms
- MPCS 55003 Intermediate Algorithms
- MPCS 55005 Advanced Algorithms

**Programming:**
- MPCS 51036 Java Programming
- MPCS 51040 C Programming
- MPCS 51042 Python Programming
- MPCS 51043 Swift Programming
- MPCS 51100 Advanced Programming
Computer Systems, Networks and Architecture:
- MPCS 51020 Computer Architecture
- MPCS 51300 Compilers
- MPCS 51400 Functional Programming
- MPCS 52011 Introduction to Computer Systems
- MPCS 52030 Operating Systems
- MPCS 52040 Distributed Systems
- MPCS 53001 Databases
- MPCS 53003 Advanced Databases
- MPCS 54001 Networks

2. Complete three (3) specialization courses:

Software Engineering
- MPCS 51030 iOS Application Development
- MPCS 51031 Android Application Development
- MPCS 51044 C++ for Advanced Programmers
- MPCS 51050 OO Architecture: Patterns, Technologies, Implementations
- MPCS 51200 Introduction to Software Engineering
- MPCS 51220 Applied Software Engineering
- MPCS 51221 Applied Software Engineering II
- MPCS 51230 User Interface and User Experience Design
- MPCS 51240 Product Management
- MPCS 51410 Object Oriented Programming
- MPCS 52553 Web Development

High Performance Computing
- MPCS 51083 Cloud Computing
- MPCS 51087 High Performance Computing
- MPCS 55005 Advanced Algorithms
- MPCS 56420 Bioinformatics for Computer Scientists
- MPCS 58001 Numerical Methods
- MPCS 58020 Time Series Analysis and Stochastic Processes

Data Analytics
- MPCS 51083 Cloud Computing
- MPCS 53003 Advanced Databases
- MPCS 53013 Big Data
- MPCS 53111 Machine Learning
- MPCS 53110 Foundations of Computational Data Analysis
- MPCS 53112 Advanced Data Analytics
- MPCS 53120 Applied Data Analysis
- MPCS 56420 Bioinformatics for Computer Scientists
Mobile Computing
- MPCS 51030 iOS Application Development
- MPCS 51031 Android Application Development
- MPCS 51032 Advanced iOS
- MPCS 51033 Backends for Mobile Applications
- MPCS 51034 React Native Application Development
- MPCS 51230 User Interface and User Experience Design

3. Complete three (3) elective courses
- MPCS 51026 Trading Systems Design
- MPCS 51030 iOS Application Development
- MPCS 51031 Android Application Development
- MPCS 51032 Advanced iOS
- MPCS 51033 Backends for Mobile Applications
- MPCS 51034 React Native Application Development
- MPCS 51044 C++ for Advanced Programmers
- MPCS 51045 Advanced C++
- MPCS 51050 OO Architecture
- MPCS 51083 Cloud Computing
- MPCS 51087 High Performance Computing
- MPCS 51200 Introduction to Software Engineering
- MPCS 51220 Applied Software Engineering
- MPCS 51221 Applied Software Engineering II
- MPCS 51230 User Interface and User Experience Design
- MPCS 51240 Product Management
- MPCS 51250 Entrepreneurship for Technology
- MPCS 51410 Object Oriented Programming
- MPCS 52553 Web Development
- MPCS 52554 Advanced Web Development
- MPCS 53110 Foundations of Computational Data Analysis
- MPCS 53003 Advanced Databases
- MPCS 53013 Big Data
- MPCS 53111 Machine Learning
- MPCS 53112 Advanced Data Analytics
- MPCS 53120 Applied Data Analysis
- MPCS 55005 Advanced Algorithms
- MPCS 56420 Bioinformatics for Computer Scientists
- MPCS 56515 Computer and Network Security
- MPCS 56600 Introduction to Blockchain
- MPCS 58001 Numerical Methods
- MPCS 58020 Time Series Analysis
4. **Internship**

As part of the 12-course program, we expect all full-time students to participate in an internship for the summer quarter. This internship will give students the opportunity to put the skills they are learning in the classroom into practice in the workplace. This will help build student's resumes and provide them with work or research experience. Students can find internship opportunities both internal and external to the University.

The 12-course Masters in Computer Science specialization program can be completed full time in 15 months. Students who begin in the Autumn quarter 2019 will take three classes per quarter for the Autumn, Winter and Spring quarters. Students will complete their internship in Summer 2020 and return for their final three classes in Autumn 2020. They will graduate in December 2020.

Please let me know if you have any questions about the program, the degree or the curriculum.

Sincerely,

Borja Sotomayor  
Director, Masters Program in Computer Science  
Senior Lecturer, Department of Computer Science