Computer Science
UNIVERSITY OF COLORADO **BOULDER**

MS-CS Online Sample Degree Plan

Data Structures and Algorithms Pathway

1. Complete the pathway Foundations of Data Structures and Algorithms (3 credits) for Admission and become a degree seeking student. Earn a B or better in each course.

Pathway | Breadth: Foundations of Data Structures and Algorithms (3 credits)

- CSCA 5414: Dynamic Programming, Greedy Algorithms – Cross-listed with DTSA 5503 (1 credit)
- CSCA 5424: Approximation Algorithms and Linear Programming (1 credit)
- CSCA 5454: Advanced Data Structures, RSA and Quantum Algorithms (1 credit)

2. Complete the 4 remaining Breadth specializations (12 credits). Earn a B or better in each course.

Network Systems: Principles and Practice (3 credits)

CSCA 5063: Network Systems Foundation (1 credit)

CSCA 5073: Network Principles in Practice: Linux Networking (1 credit)

CSCA 5083: Network Principles in Practice: Cloud Networking (1 credit)

Machine Learning: Theory & Hands-On Practice with Python (3 credits)

CSCA 5622: Intro. to Machine Learning: Supervised Learning (1 credit)

CSCA 5632: Unsupervised Algorithms in Machine (1 credit)

CSCA 5642: Introduction to Deep (1 credit)

Computing, Ethics, and Society (3 credits)

CSCA 5214: Computing, Ethics, and Society Foundations (1 credit)

CSCA 5224: Ethical Issues in AI and Professional Ethics (1 credit)

CSCA 5234: Ethical Issues in Computing Applications (1 credit)

Foundations of Autonomous Systems (3 credits)

CSCA 5834: Modeling of Autonomous Systems (1 credit)

CSCA 5844: Reqmnt. Specifications for Autonomous Systems (1 credit)

CSCA 5854: Verification + Synthesis of Autonomous Systems (1 credit)

3. Complete 15 Elective credits – including 4 full specializations (15 credits). Earn a C or better in each course.

Elective Courses (15 credits)

Select your elective courses using any of the following options:

- Complete 5 full MS-CS elective specializations
- Complete 4 full MS-CS elective specializations and 3 stand-alone MS-CS electives or outside elective courses
- Complete 3 MS-CS elective specializations and 2 outside elective specializations
- Complete 3 MS-CS elective specializations and 1 outside elective specialization and 3 stand-alone outside elective courses

Non-Degree courses may not be used for credit.