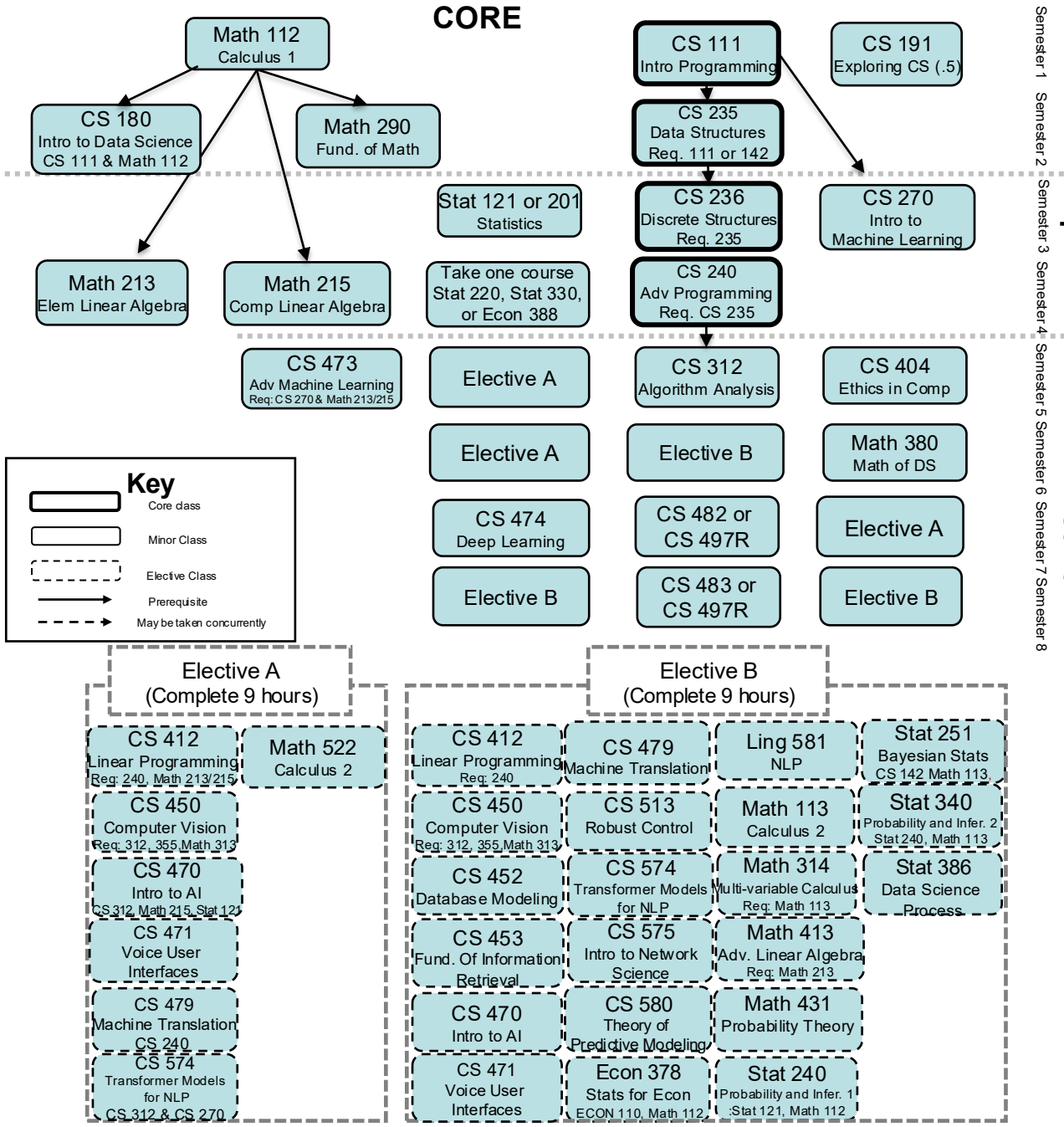
BYU Machine Learning Major

Fall 2025 Requirements

Major (74 Hours)

1. Grades below C- are not allowed in major courses.
2. Complete the following courses: CS 111, CS 180, CS 191, CS 235, CS 236, CS 240, CS 270, CS 291 CS 312, CS 404, CS 473, CS 474
3. Complete the following supporting courses: Math 112, Math 290, Math 380, Math 213, and Math 215.
4. Complete one of the following: Stat 121 or Stat 201
5. Complete one of the following: Stat 220, STAT 330 or Econ388
6. Complete 3 of the following (A): CS 412, CS 450, CS 470, CS 471, CS 479, CS 574 or Math 522.
7. Complete 1 option
   7.1:CS 482 (Data Science Capstone 1) and CS 483 (Data Science Capstone 2)
   7.2: complete 6 credits (2 semesters) of CS 497R: Undergraduate research
8. Complete 9 hours from the following (B): May not double count if used for requirement 6.
   A. –CS 412, 450, 452, 453, 470, 471, 479, 513, 574, 575, 580, Econ 378, Ling 581, Math 113, Math 314, Math 413, Math 431, Stat 240, Stat 251, Stat 340, Stat 386



Guide only— please consult MyMap for full requirements.

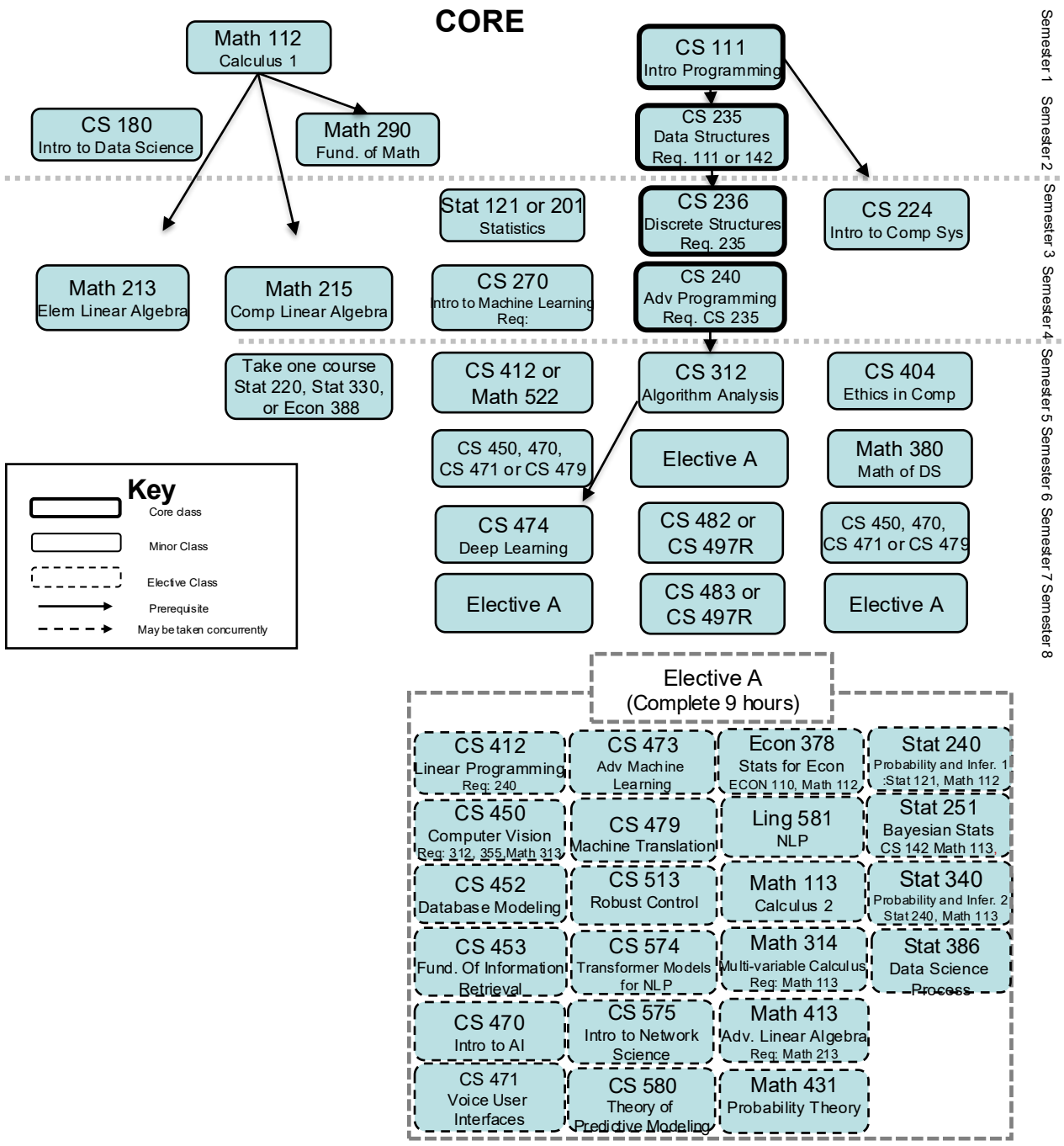
BYU Computer Science Major

Machine Learning Emphasis

Fall 2024 Requirements

Major (74 Hours)

1. Grades below C- are not allowed in major courses.
2. Complete the following courses: CS 111, CS 180, CS 224, CS 235, CS 236, CS 240, CS 312, CS 404, CS 270, CS 474
3. Complete the following supporting courses: Math 112, Math 290, Math 380, Math 213, and Math 215.
4. Complete one of the following: Stat 121 or Stat 201
5. Complete one of the following: Stat 220, STAT 330 or Econ388
6. Complete either CS 412 or Math 522.
7. Complete 2 of the following 6 courses: CS 450, CS 470, CS 471, CS 473, CS 479, or CS 574.
8. Complete 1 option
   - 8.1: CS 482 (Data Science Capstone 1) and CS 483 (Data Science Capstone 2)
   - 8.2: complete 6 credits (2 semesters) of CS 497R: Undergraduate research
9. Complete 9 hours from the following:
   A. –CS 412, 450, 452, 453, 470, 471, 473, 479, 513, 574, 575, 580, Econ 378, Ling 581, Math 113, Math 314, Math 413, Math 341, Stat 240, Stat 251, Stat 340, Stat 386



Guide only— please consult MyMap for full requirements.

BYU Computer Science Major

Machine Learning Emphasis

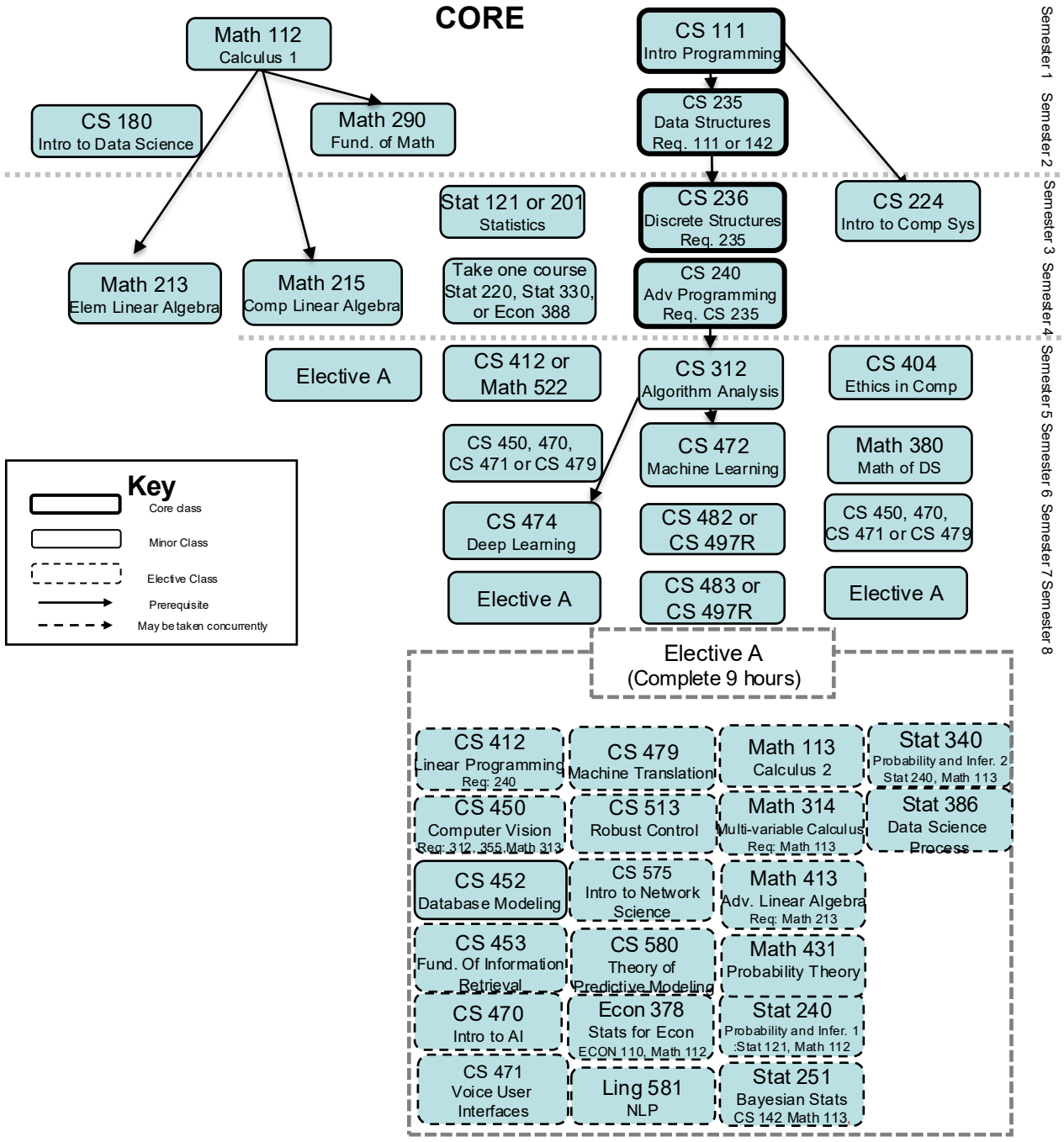
Fall 2023 Requirements

Major (74 Hours)

1. Grades below C- are not allowed in major courses.
2. Complete the following courses: CS 111, CS 180, CS 224, CS 235, CS 236, CS 240, CS 312, CS 404, CS 472, CS 474
3. Complete the following supporting courses: Math 112, Math 290, Math 380, Math 213, and Math 215.
4. Complete one of the following: Stat 121 or Stat 201
5. Complete one of the following: Stat 220, STAT 330 or Econ388
6. . Complete either CS 412 or Math 522.
7. Complete 2 of the following 4 courses: CS 450, CS 470, CS 471 or CS 479.
8. Complete 1 option
   - 8.1: CS 482 (Data Science Capstone 1) and CS 483 (Data Science Capstone 2)
   - 8.2: complete 6 credits (2 semesters) of CS 497R: Undergraduate research

Complete 9 hours from the following:

A. –CS 412, 450, 452, 453, 470, 471, 479, 513, 575, 580, Econ 378, Ling 581, Math 113, Math 314, Math 413 Stat 240, Stat 340, Stat 251, Stat 340, Stat 386



Guide only— please consult MyMap for full requirements.

BYU Computer Science Major

Data Science Emphasis

Fall 2022 Requirements

Major (74 Hours)

1. Grades below C- are not allowed in major courses.
2. Complete the following courses: CS 111, 224, 235, 236, 240, 312, 324, 404, 452, 472, 474
3. Complete the following supporting courses: WRTG 316, Math 112,113, 213, 215, and PHSCS 121
4. Complete one of the following: Stat 121 or Stat 201
5. Complete one of the following: Stat 220, STAT 330 or Econ388
6. Complete a total of 6 elective courses from the follow 3 groups:
   - A. -1 course **must** be from the following courses: Stat 240, Stat 340, Stat 251, Econ 378, CS 412, Econ 388, Econ 488, Econ 588, Ling 581, Math 314, Math 413
   - B. 4 courses **must** be from the following courses: CS 180, 252, 260, 329, 330, 340, 345, 355, 356,393, 401R**,450, 453, 455, 456, 460, 462, 465, 470 471,, 482, 483, 486, 497R**, 501R** 513,580
   - C. 1 additional course from a list that includes all classes from elective A and B.
1. If a class is taken in A or B, it may not double count in C.
2. Students are strongly encouraged to take the DS capstone courses (CS 482 and 483) (If CS 401R, 497R, or 501R is chosen, it must be taken for three credit hours)

CORE

Semester 1 Semester 2 **Freshman**

Math 112 Calculus 1

CS 180 Intro to Data Science

Math 113 Calculus 2

CS 111 Intro Programming

CS 235 Data Structures Req. 111 or 142

Semester 3 Semester 4 **Sophomore**

Stat 121 or 201 Statistics

Math 213 Elem Linear Algebra

Math 215 Comp Linear Algebra

CS 236 Discrete Structures Req. 235

CS 224 Intro to Comp Sys

CS 240 Adv Programming Req. CS 235 &236

Semester 5 Semester 6 **Junior**

Take one course Stat 220, Stat 330, or Econ 388

CS 312 Algorithm Analysis

CS 324 Sys Programming

Phscs 121 Physics

CS 452 Database Modeling

CS 472 Machine Learning

Elective A

CS 474 Deep Learning

Elective B

WRTG 316 Technical Writing

Elective B

Elective B

Elective C

CS 404 Ethics in Comp

Semester 7 Semester 8 **Senior**

Key

- Core class
- Minor Class
- Elective Class
- Prerequisite
- May be taken concurrently

Elective A (Complete 1 courses)

- CS 412 Linear Programming Req: 240
- Math 314 Multi-variable Calculus Req: Math 113
- Econ 378 Stats for Econ ECON 110, Math 112
- Math 413 Adv. Linear Algebra Req: Math 213
- Econ 388 Intro Econometrics Req: Econ 378, 380
- Stat 240 Probability and Infer. 1 :Stat 121, Math 112
- Econ 488 Appl. Econometrics Req: Econ 388
- Stat 251 Bayesian Stats CS 142 Math 113
- Econ 588 Adv. Econometrics Req: Econ 388
- Stat 340 Probability and Infer. 2 Stat 240, Math 113
- Ling 581 NLP

**Must be taken for 3 hours to fill the requirement

Elective B Complete 3 courses)

- CS 252 Intro Comp Theory Req: 235
- CS 393 Algorithms & Problem Solving
- CS 470 Intro to AI
- CS 401R** Topics in CS
- CS 471 Voice User Interfaces
- CS 260 Web Programming Req: 142 or 111
- CS 450 Computer Vision Req: 312, 355,Math 313
- CS 482 DS Capstone 1 Req: 240
- CS 329 Testing, Analysis, Verify Req: 240
- CS 453 Info Retrieval Req: 240
- CS 483 DS Capstone 2 Req: 482
- CS 330 Prog Languages Req: 240
- CS 455 Comp Graphics Req: 355,Math 213,215
- CS 486 Verification & Valid Req: 312
- CS 340 Design & Testing Req: 240
- CS 456 UI Software Req: 240, 356
- CS 497R** Research
- CS 345 Operating Sys Dsgn Req: 224 & 240
- CS 460 Networks Req: 324
- CS 501R** Adv CS Topics
- CS 355 Interactive Graphic Req: 240,Math 213,215
- CS 462 Distributed Systems Req: 260, 324
- CS 513 Robust Control
- CS 356 User Experience Req: 240
- CS 465 Security Req: 324
- CS 580 Theory of Predictive Modeling

Elective C (Complete 1 course)

- CS 252 Intro Comp Theory Req: 235
- CS 356 User Experience Req: 240
- CS 260 Web Programming Req: 142
- CS 393 Algorithms & Problem Solving
- CS 456 UI Software Req: 240, 356
- CS 483 DS Capstone 2 Req: 240, 482
- CS 329 Testing, Analysis, Verif Req: 240
- CS 401R** Topics in CS
- CS 460 Networks Req: 324
- CS 486 Verification & Valid Req: 312
- CS 330 Prog Languages Req: 240
- CS 412 Linear Programming Req: 240
- CS 462 Distributed Systems Req: 260, 324
- CS 497R** Research
- CS 340 Design & Testing Req: 240
- CS 450 Computer Vision Req: 312, 355,Math 313
- CS 465 Security Req: 324
- CS 501R** Adv CS Topics
- CS 345 Operating Sys Dsgn Req: 224 & 240
- CS 453 Info Retrieval Req: 240
- CS 470 Artificial Intelligence 312,Math 215,Stat 121
- CS 513 Robust Control
- CS 355 Interactive Graphic Req: 240,Math 213,215
- CS 455 Comp Graphics Req: 355,Math 213,215
- CS 471 Voice User Interfaces
- CS 580 Theory of Predictive Modeling
- CS 482 DS Capstone 1 Req: 240
- Econ 378 Stats for Econ ECON 110, Math 112
- Econ 388 Intro Econometrics Req: Econ 378, 380
- Econ 588 Adv. Econometrics Req: Econ 388
- Ling 581 NLP
- Math 314 Multi-variable Calculus Req: Math 113
- Math 413 Adv. Linear Algebra Req: Math 213
- Stat 240 Probability and Infer. 1 :Stat 121, Math 112
- Stat 251 Bayesian Stats CS 142 Math 113
- Stat 340 Probability and Infer. 2 Stat 240, Math 113

Guide only— please consult MyMap for full requirements.