

CIS-Data Science [Spring 2020 Catalog]

- Arrows indicate prerequisite course(s)
- All courses are 3 credit hours unless otherwise indicated
- Shaded courses are Computing common core courses
- Rounded corner courses are taught by other departments
- 60 upper level hours and 120 total hours are required for graduation
- Pattern of typical offering: F=Fall, S=Spring, Su=Summer (subject to change)
- Exit Requirement** : Must give two spoken presentations in 3XXX or 4XXX Computing courses.

Requisites & Prereqs - (7) (25 cr. hrs.)

- SPC Speech or Public Speaking
- ENC 2210 Technical Writing

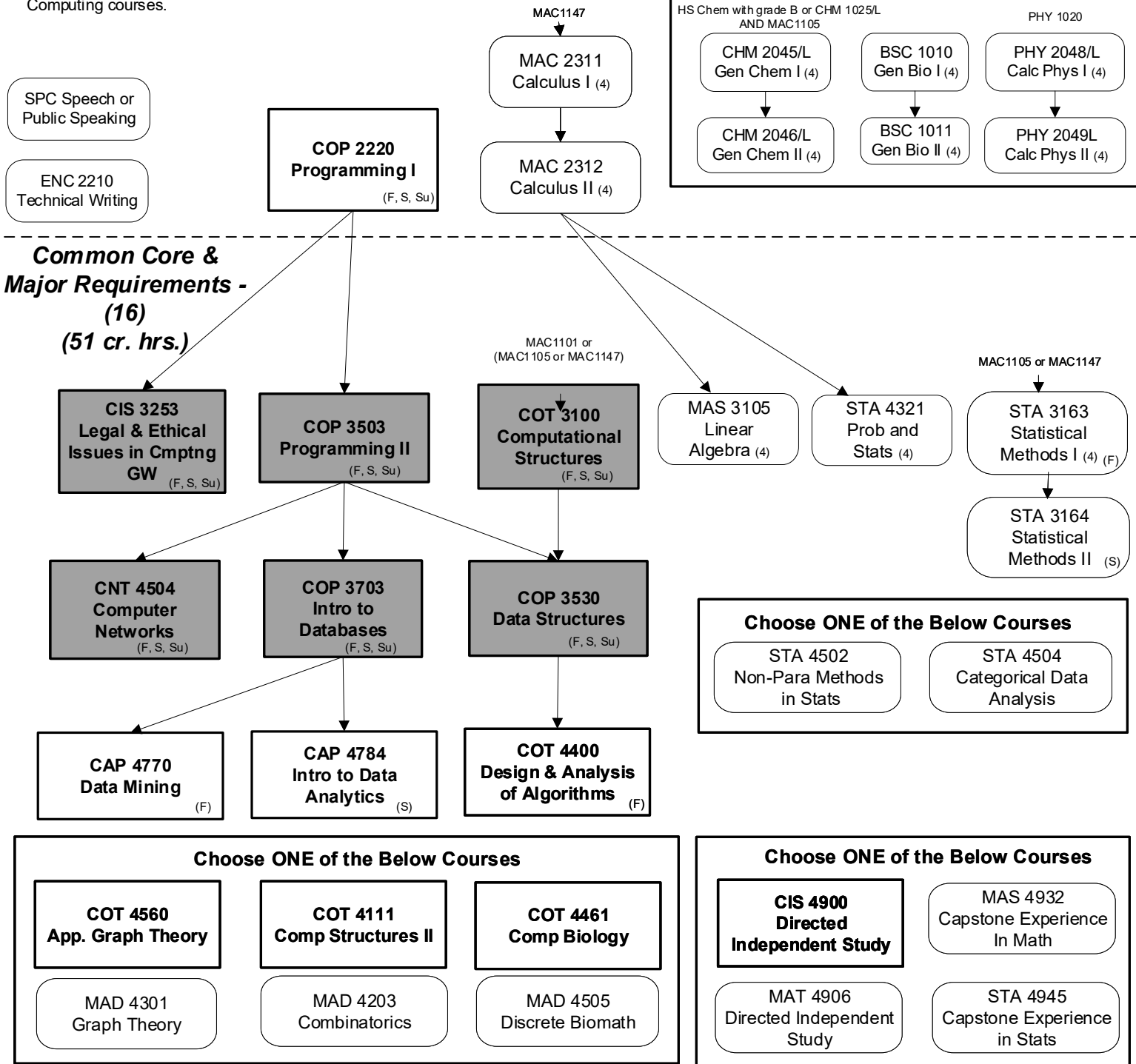
Choose ONE of the Below Science Sequences

HS Chem with grade B or CHM 1025/L AND MAC1105

PHY 1020

CHM 2045/L Gen Chem I (4)	BSC 1010 Gen Bio I (4)	PHY 2048/L Calc Phys I (4)
CHM 2046/L Gen Chem II (4)	BSC 1011 Gen Bio II (4)	PHY 2049L Calc Phys II (4)

Common Core & Major Requirements - (16) (51 cr. hrs.)



Major Electives (3) (9 cr. hrs.)

Select 3 courses for at least 9 credits from the following options:

- Any upper-level Computing course not used to fulfill other requirements (prefix CAP, CDA, CEN, CIS, CNT, COP or COT).
- Any 4000-level Statistics course not used to fulfill other major requirements (prefix STA).
- MAP4231 Operations Research (3 credits), MAT4931 Special Topics in Mathematical Science (3 credits).
- A maximum of 6 credits of any of CIS4900, MAT4906, or STA4906.

BS in CIS – Data Science

- All courses are 3 credit hours unless otherwise indicated
- 60 upper level hours and 120 total hours are required for graduation
- Exit Requirement: Must give two spoken presentations in 3XXX or 4XXX Computing courses.
- **Requisites & Prerequisites – (7) (25 credit hours)**
 - Speech or Public Speaking (SPC prefix); taught by another department
 - ENC2210 Technical Writing; taught by a different department
 - MAC2311 Calculus I; 4 credits; taught by another department; Prerequisites: MAC1147
 - MAC2312 Calculus II; 4 credits; taught by another department; Prerequisites: MAC2311 Calculus I
 - COP2220 Programming I; fall, spring and summer
 - Select one of the following three sequences:
 - PHY2048C Calc-based Physics I; 4 credits; taught by another department; Prerequisites: MAC2311 and PHY1028; Corequisite: MAC2312
 - PHY2049/L Calc Physics II with Lab; 4 credits; taught by another department; Prerequisites: PHY2048C and MAC2312
 - OR
 - CHM2045/L Gen Chem I with Lab; 4 credits; taught by another department; Prerequisites: HS Chem with grade B or CHM1025L and MAC1105
 - CHM2046/L Gen Chem I with Lab; 4 credits; taught by another department; Prerequisites: CHM2045/L
 - OR
 - BSC1010 General Biology I; 4 credits; taught by another department
 - BSC1011 General Biology II; 4 credits; taught by another department; Prerequisites: BSC1010
- **Common Core & Major Requirements– (16) (51 credit hours)**
 - COT3100 Computational Structures; fall, spring and summer; Computing Common Core; Prerequisites: MAC1101 or MAC1105 or MAC1147
 - CIS3253 Legal & Ethical Issues in Computing; fall, spring and summer; Computing Common Core; Prerequisites: COP2220 Programming I
 - COP3503 Programming II; fall, spring and summer; Computing Common Core; Prerequisites: COP2220 Programming I
 - COP3530 Data Structures; fall, spring and summer; Prerequisites: COT3100 Computational Structures and COP3503 Programming II
 - CNT4504 Computer Networks; fall, spring and summer; Computing Common Core; Prerequisites: COP3503 Programming II
 - COP3703 Intro to Databases; fall, spring and summer; Computing Common Core; Prerequisites: COP3503 Programming II
 - CAP4770 Data Mining; 3 credits; fall; Prerequisites: COP3703 Intro to Databases
 - CAP4784 Data Analytics; 3 credits; spring; Prerequisites: COP3703 Intro to Databases
 - COT4400 Design & Analysis of Algorithms; fall; Prerequisites: COP3530 Data Structures
 - MAS3105 Linear Algebra, 4 credits; taught by another department; Prerequisites: MAC2312
 - STA3163 Statistical Methods I, 4 credits; taught by another department; Prerequisites: MAC1105 or MAC1147
 - STA3164 Statistical Methods II, 3 credits; taught by another department; Prerequisites: STA3163
 - STA4321 Probability and Stats, 4 credits; taught by another department; Prerequisites: MAC2312
 - Select one of the following two courses

- STA4502 Non-Para Methods in Stats; 3 credits; taught by another department; Prerequisites: STA4321 or STA2014 or STA2023
- OR
- STA4504 Categorical Data Analysis; 3 credits; taught by another department; Prerequisites: STA3163
- Select one of the following six courses
 - COT4560 Applied Graph Theory; 3 credits
 - OR
 - COT4111 Computational Structures II; 3 credits
 - OR
 - COT4461 Computational Biology; 3 credits
 - OR
 - MAD4301 Graph Theory; 3 credits; taught by another department
 - OR
 - MAD4203 Combinatorics; 3 credits; taught by another department
 - OR
 - MAD4505 Discrete Biomath; 3 credits; taught by another department
- Select one of the following four courses
 - CIS4900 Directed Independent; 3 credits
 - OR
 - MAT4906 Directed Independent; 3 credits; taught by another department
 - OR
 - MAS4932 Capstone Experience in Math; 3 credits; taught by another department
 - OR
 - STA4945 Capstone Experience in Stats; 3 credits; taught by another department
- **Major Electives– (3) (9 credit hours)**
 - Any upper-level Computing course not used to fulfill other requirements (prefix CAP, CDA, CEN, CIS, CNT, COP or COT)
 - Any 4000-level Statistics course not used to fulfill other major requirements (prefix STA)
 - MAP4231 Operations Research (3 credits), MAT4931 Special Topics in Mathematical Science (3 credits)
 - A maximum of 6 credits of any of CIS4900, MAT4906, or STA4906