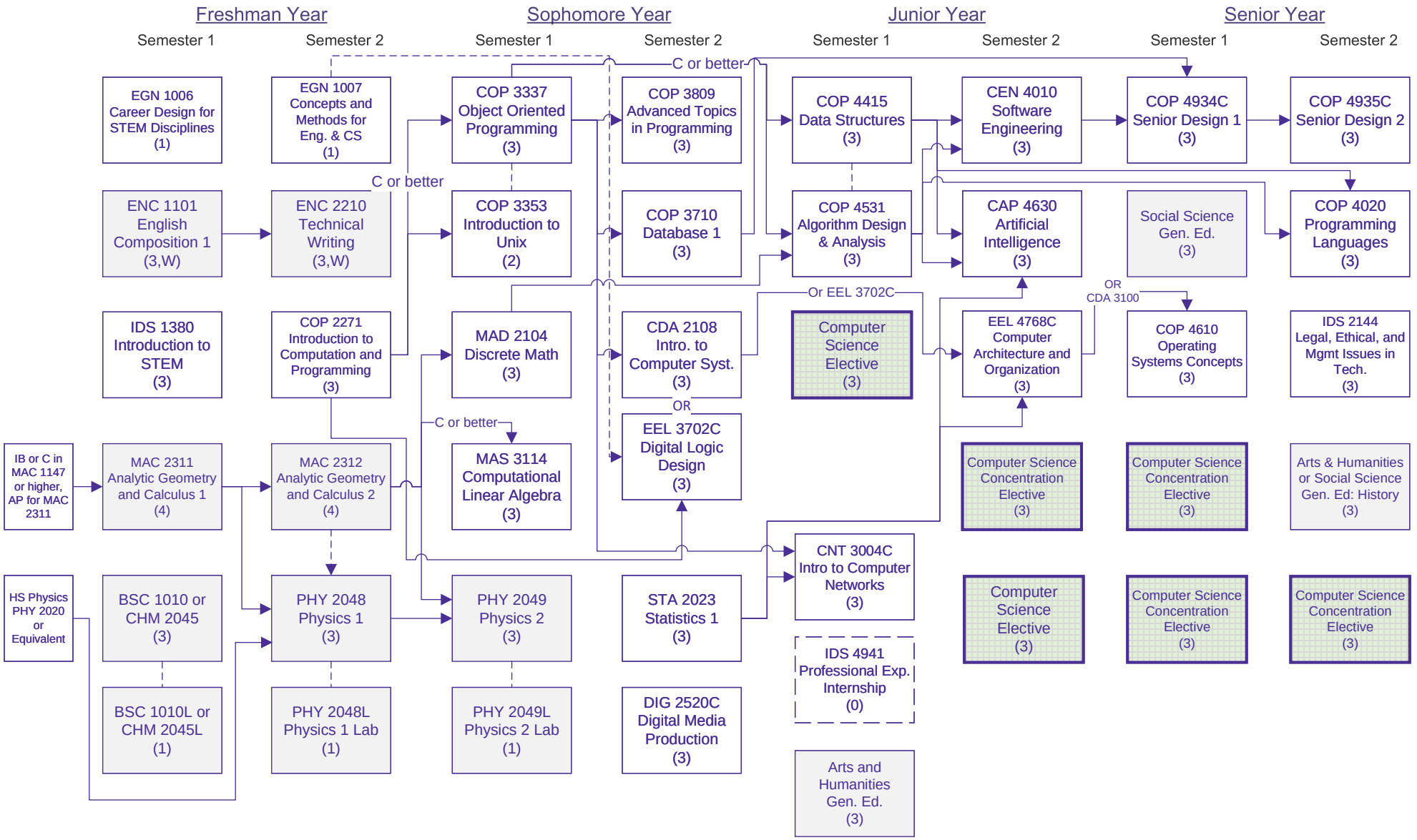
BS in Computer Science

2021-2022 Catalog



Legend:

Course Number Course Name (credit, requirement met)	Program/ Concentration Elective	General Education or Technical Elective	Permission from Dept. Chair, Provost, or Designee Needed	Prerequisite; Co-requisite; Pre-Requisite OR Co-Requisite

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Last Modified 3/2022

BS in Computer Science
Program/Concentration Electives & General Education

2021-2022 Catalog

Program/Concentration Electives

Advanced Topics

Choose 12 credits from Big Data Analytics, Game Development & Simulation, Information Assurance & Cyber-Security, Software Engineering, Autonomous Systems, or Computer Science Electives courses.

Game Development & Simulation

- CAP 4034 Computer Animation (3, COP 4415, COP 4531)
- CAP 4052 Game Design and Development 1 (3, COP 4730)
- CAP 4056 Game Design and Development 2 (3, COP 4052)
- CAP 4730 Computer Graphics (3, COP 4415, COP 4531)

Information Assurance & Cyber - Security

- CIS 4203 Digital Forensics (3, CNT 3004C / CIS 4367)
- CIS 4204 Ethical Hacking (3, CNT 3004C / CIS 4367)
- CIS 4362 Applied Cryptography (3, STA 2023 OR STA 3032, COP 3530 OR COP 4415 and COP 4531)
- CIS 4367 Computer Security (3, CNT, 3004, CIS 4362 / COP 4610)

Software Engineering

- CEN 4073 Software Requirements Engineering (3, CEN 4010)
- CEN 4065 Software Design and Architecture (3, CEN 4073)
- CEN 4072 Software Verification and Quality Assurance (3, CEN 4073)
- CEN 4722 User Interface and User Experience (3, CEN 4010)

Big Data Analytics

- CAP 3774 Data Warehousing (3, COP 3710)
- COP 3729C Database 2 (3, COP 3710)
- CAP 4770 Data Mining & Text Mining (3, (COP 3337 or COP 2034) and COP 3710 and (STA 3036 or MAS 3114))
- CAP 4786 Topics in Big Data Analytics (3, COP 3710 and MAS 3114)

Autonomous Systems

- COP 4421 Autonomous Systems Programming (3, COP 3337)
- CAP 4612 Machine Learning (3, STA 2023 and MAS 3114 OR MAS 3105, COP 3530 OR COP 4415 and COP 4531)
- CAP 4613 Applied Deep Learning (3, COP 4415 and COP 4531)
- CEN 4721 human Computer Interaction (3, COP 3530, COP 4415 and COP 4531)

Computer Science (Program Electives)

- COP 2034 Intro. to Programming Using Python (3)
- COP 3834 Web Application Development (3, COP 2271)
- CEN 4088 Software Security Testing (3, CEN 4010)
- CEN 4213 Embedded Systems Programming (3, COP 4415, EEL 4768C)
- CIS 4369 Web Application Security (3, CIS 4362)
- CNT 4409 Network Security (3, CIS 4362, CNT 3004C)
- CAP 4410 Computer Vision (3, MAS 3114 OR MAS 3105, COP 3330C, COP 4415 and COP 4531 OR COP 3530)
- COP 4520 Intro. to Parallel and Distributed Computing (3,(EEL 4768C OR CDA 3100), COP 4415, COP 4531)
- CNT 4526 Wireless and Mobile Networking (3, CNT 3004C, COP 4531)

Program/Concentration Electives

Computer Science (Program Electives)

- CAP 4612 Machine Learning (3, STA 2023, MAS 3114 OR MAS 3105, COP 3530 OR COP 4415 and COP 4531)
- COP 4620 Compilers and Interpreters (3, COP 4415)
- COP 4656 Mobile Device Applications (3, COP 3337)
- EEL 4660C Autonomous Robotic Syst. (3, COP3337, EEL 3202C OR CDA 2108)
- CEN 4721 Human Computer Interaction (3, COP 4415 and COP 4531)
- CAP 4830 Modeling and Simulation (3, STA 2023, COP 3809C)
- COP 4930 Special Topics (3, CEN 4010)
- CAP 4613 Applied Deep Learning (3, COP 4415 and COP 4531)
- CAP 4122 Virtual Reality (3, CAP 4730)
- MAD 3401 Numerical Analysis (3, MAS 3105 or MAS 3114)
- MAP 2302 Differential Equations (3, MAC 2312 with C or better)

General Education

Arts & Humanities

Required one (1) from the following:

- ARH 2000 Art Appreciation (3-W)
- HUM 2020 Introduction to the Humanities (3-W)
- LIT 2000 Introduction to Literature (3)
- PHI 2010 Introduction to Philosophy (3-W)

Optional:
HUM 2022 Explorations in Humanities (3-W)
IDS 2144 Legal, Ethical, and Management Issues in Technology (3, CS Req.)

Social Sciences

Required one (1) from the following:

- AMH 2020 American History Since 1877 (3-W; Civic Literacy)
- ECO 2013 Principles of Macroeconomics (3-W)
- PSY 2012 General Psychology (3-W)

Optional select from the following:

- AMH 2010 American History to 1877 (3-W)
- AMH 2930 Special Topics in American History (3-W)
- ECO 2023 Principles of Microeconomics (3-W)

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Legend: *Course name (credits-requirement met, pre-requisites/co-requisites)*

Last Modified 06/2021