# (78308) B.S. in Computer Science (Data Science Option): 4-year Study Plan

*This first-year study plan is for new students only. All new students should see their CS/IT faculty advisor in October to review and update their 4-year study plans before the early registration period (in November). Students should pay attention to each course's prerequisites and the available courses in each semester.* Please check the academic guide sheets at http://yoda.kean.edu/studyplans/

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|---|---|
| Name: | Faculty Advisor: |
| Kean Id# | Catalog Year: |

Notes:

| 1st Year Fall (15) | 1st Year Spring (17) |
|---|---|
| **MATH 1054** Pre-calculus (3) | **MATH 2110** Discrete Structures (3) |
| **CPS 1231** Fundamentals of CS (4) | **CPS 2231** Computer Programming (4) |
| **ENG 1030** College Composition (3) | **COMM 1402** Speech Comm. (3) |
| **GE 1000/3000** Transition to Kean (1) | **HIST 1062** Worlds of History (3) |
| **Lab Science 1** (4) | **Lab Science 2** (4) |

Internship, summer course, or summer research

| 2nd Year Fall (17) | 2nd Year Spring (16/17) |
|---|---|
| **MATH 2415** Calculus I (4) | **MATH 2416** Calculus II (4) or MATH 2995 Linear Algebra (3) |
| **CPS 2232** Data Structures (4) | **TECH 2920** Computer Systems (3) |
| **CPS 2390** Computer Org. and Arch. (3) | **CPS 3250** Computer Operating Systems (3) |
| **ENG 2403** World Literature (3) | **ENG 3091** Technical Writing (3) |
| **GE 2024** Research and Technology (3) | **Social Sciences** (3) |
| | **CPS 2010** Career Education - **Free Elective #1** (1) |

Internship, summer course, or summer research

| 3rd Year Fall (15/16) | 3rd Year Spring (15) |
|---|---|
| **MATH 3700** Big Data Computing (3) – FA only | **MATH 2526** Applied Statistics I (3) |
| **CPS 3740** Database Management Systems (SP/FA)(3) | **CPS 3500** Programming WWW (3) – SP only |
| **CPS Elective** #1 (3) | **CPS Elective** #2 (3) |
| **Free Elective** #2 (3) | **CPS Elective** #3 (3) |
| **Humanities** (3) | **Free Elective** #3 (3) |

Internship, summer course, or summer research

| 4th Year Fall (12/13) | 4th Year Spring (12) |
|---|---|
| **CPS 4745** Visualization Design & Development (3) – FA only | **CPS 4951** Senior Project (3) – SP only |
| **CPS 4802** AI Machine Learning Algorithms (3) – FA only | **CPS 4721** Data Mining Principles (3) – SP only |
| **Free Elective** 3000/4000 #4 (3/4) | **CPS Elective** #4 (3) |
| **MATH 3526** Advanced Statistics (SP/FA)(3) | **Free Elective** 3000/4000 #5 (3) |
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Internship, summer course, or summer research



*Note: The course sequence and layout provided is an estimate, based on available information and may change, due to program requirements, student performance, and may be subject to human error. All students should check their study plans and take personal responsibility for accuracy and correctness.*

| Fall offered CPS Major Electives | Spring offered CPS Major Electives |
|---|---|
| **CPS 3310** Programming Languages (FA)(3) | **CPS 3320** Python Programming (SP)(3) |
| **CPS 3351** Information Systems Programming (FA)(3) | **CPS 3498** Computer Security (SP)(3) |
| **CPS 3498** Computer Security (FA)(3) | **CPS 3500** Programming WWW (SP)(3) |
| **CPS 3740** Database Management Systems (FA)(3) | **CPS 3525** Programming in the UNIX Environment (SP)(3) |
| **CPS 4301** Software Engineering (FA)(3) | **CPS 3601** Human Computer Interaction (SP)(3) |
| **CPS 4498** Digital Forensics (FA)(3) | **CPS 3740** Database Management Systems (SP)(3) |
| **CPS 4745** Visualization Design & Development (FA)(3) | **CPS 4721** Data Mining Principles (SP)(3) |
| **CPS 4802** AI Machine Learning Algorithms (FA)(3) | **CPS 4801** Artificial Intelligence Applications (SP)(3) |
| **CPS 4931** Distributed Systems Applications (FA)(3) | |
| **CPS 4601** User Experience Design (TBA)(3) | |
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