5-year B.S. CS/M.S. CIS: Study Plan **(start with Math 1054) total 126+24 = 150 credits**

*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:

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| **1st Year Fall (15)** | **1st Year Spring (17)** |
| **MATH 1054** Precalculus (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 Communication (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

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| **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 – recommend Free Elective #1 (1) |

Internship, summer course, or summer research

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| **3rd Year Fall (15/16)** | **3rd Year Spring (15/16)** |
| **MATH 2526** Applied Statistics I (3) | **CPS 3962** Object Oriented Analysis & Design (3) – SP only |
| **CPS 3440** Analysis of Algorithms (3)- FA only | **CPS 4200** Systems Prog. (SP)(3) or **CPS Elective** (3) #2 |
| **CPS 3498** Computer Security (3) – FA/SP | **CPS Elective** (3) #1 (recommend CPS 3740 (3) Database) |
| **MATH or Science** (3/4) #1  | **MATH or Science** (3/4) #2 |
| **Humanities** (3)  | **Free Elective** (3) #2 |

Internship, summer course, or summer research

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| **4th Year Fall (12+3)** | **4th Year Spring (12+3)** |
| **MATH Elective** 3xxx (3/4) | **CPS 4951** Senior Project (SP)(3) or CPS 4961 Sr. Research (3) |
| **CPS 4150** Computer Arch. (FA)(3) or **CPS Elective** (3) #2 | **CPS 4222** Principles of Networking (SP)(3) |
| **CPS Elective** (3) #3 | **CPS Elective** (3) #4 |
| **Free Elective** 3000/4000 (3) #3 | **Free Elective 3000/4000** (3) #4 |
| **CPS 5440** Advanced Analysis of Algorithms (3) | **CPS 5100** Computer Information Systems (3) |

Internship, summer course, or summer research

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| **5th Year Fall (12)** | **5th Year Spring (12)** |
| CPS 5740 Database Systems (3) | CPS 5981 Software Assurance (3) |
| CPS 5301 Software Engineering (3) | CIS 5995 CIS Capstone (3) |
| CPS 5xxx elective #1 (3) | CPS 5xxx elective #3 (3) |
| CPS 5xxx elective #2 (3) | CPS 5xxx elective #4 (3) |

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| **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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| **CPS 5498** Digital Forensics and Investigation (3) | **CPS 5500** Web Design and Development (3) |
| **CPS 5745** Interactive Information visualization (3) | **CPS 5601** Human Computer Interaction (3) |
| **CPS 5802** Machine Learning Innovation 93) | **CPS 5721** Data Mining (3) |
|  | **CPS 5931** Network Systems (3) |
| **CPS 5965** High Performance Computing (3) | **CPS 5801** Artificial Intelligence and Expert Systems 93) |
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