Summer 2025 School of Computer and Data Science Technical Electives

Applied Math

Technical Elective:

MATH4050 – Machine Learning
MATH4875 – Real Analysis I
Any 2000-Level or higher course in BIOE, BIOL, BMED, CHEM, CIVE, COMP, DATA, ELEC, ELMC, ENGR, ENVM, MECH, PHYS, or SCIN

Computer Networking

Advanced Security Elective:

COMP3575 – Scripting for Cybersecurity & Forensics
COMP3590 – Applied Cryptography
COMP3800 – Software Defined Networking
COMP3800 – Cloud Computing Systems

Networking Elective:

COMP2000 – Data Structures
COMP3125 – Data Science Fundamentals
COMP3350 – Programming Languages
COMP3400 – Operating Systems
COMP3450 – Parallel and Distributed Computing
COMP3480 – Cloud Computing
COMP3800 – Data Visualization
COMP4225 – Game Design Projects
COMP4550 – Incident Response and Business Continuity
COMP4770 – Artificial Intelligence for Gaming
MATH4050 – Machine Learning
Any surplus Advanced Security Elective

Computer Science:

COMP Elective:

COMP2500 – Security Principles
COMP3100 – System Administration
COMP3125 – Data Science Fundamentals
COMP3480 – Cloud Computing
COMP3550 – Computer Security (this course is reserved for Cybersecurity students until after the first week of registration)
COMP3575 – Scripting for Cybersecurity & Forensics
COMP3590 – Applied Cryptography (this course is reserved for Cybersecurity students until after the first week of registration)
COMP3800 – Data Visualization
COMP3800 – Software Defined Networks
COMP3800 – Cloud Computing Systems
COMP4225 – Game Design Projects
COMP4650 – Web Development (this course is reserved for IT and Computer Networking students until after the first week of registration)
COMP4770 – AI for Gaming
MATH4050 – Machine Learning

Cybersecurity:

COMP Elective:

COMP3125 – Data Science Fundamentals
COMP3350 – Programming Languages
COMP3450 – Parallel and Distributed Computing
COMP3480 – Cloud Computing
COMP3800 – Data Visualization
COMP4225 – Game Design Projects
COMP4650 – Web Development (this course is reserved for IT and Computer Networking students until after the first week of registration)
COMP4770 – AI for Gaming
MATH4050 – Machine Learning
Any surplus Cybersecurity Elective

Cybersecurity Elective:

COMP3575 – Scripting for Cybersecurity & Forensics
COMP3800 – Software Defined Networking
COMP3800 – Cloud Computing Systems

Cryptography Elective:

COMP3590 – Applied Cryptography

Data Science

Data Science Elective:

Any DATA course
Any 2000-Level or higher course in BIOE, BIOL, BMED, CHEM, CIVE, COMP, ELEC, ELMC, ENGR, ENVM, MECH, PHYS, or SCIN

IT

IT Infrastructure Electives:

COMP2000 – Data Structures
COMP2350 – Algorithms
COMP3575 – Scripting for Cybersecurity & Forensics
COMP3590 – Applied Cryptography (this course is reserved for Cybersecurity students until after the first week of registration)
COMP3125 – Data Science Fundamentals
COMP3480 – Cloud Computing
COMP3800 – Data Visualization
COMP3800 – Cloud Computing Systems
COMP4225 – Game Design Projects
COMP4770 – AI for Gaming
MATH4050 – Machine Learning

IT Operations Electives:

COMP2000 – Data Structures
COMP2350 – Algorithms
COMP3575 – Scripting for Cybersecurity & Forensics
COMP3590 – Applied Cryptography (this course is reserved for Cybersecurity students until after the first week of registration)
COMP3480 – Cloud Computing
COMP3550 – Computer Security (this course is reserved for Cybersecurity students until after the first week of registration)
COMP3800 – Data Visualization
COMP3800 – Software Defined Networks
COMP3800 – Cloud Computing Systems
COMP4225 – Game Design Projects
COMP4770 – AI for Gaming
MATH4050 – Machine Learning

For each program, the Science Electives can be satisfied with the following lab-based BIOL, CHEM, PHYS, or SCIN courses:

BIOL1100 – Cell & Molecular Biology
CHEM1100 – General Chemistry I
CHEM2200 – Basics of Organic & Biochemistry
CHEM3550 – Biochemistry
PHYS1250 – Engineering Physics I
PHYS1750 – Engineering Physics II
PHYS3500 – Thermal Physics
PHYS3800 – Quantum Physics
SCIN3000 – Geology – Earth's Evolution

In addition to these courses:
PHYS1000 – College Physics will also satisfy the lab-based Science Elective for the Computer Networking and IT programs.