

**Computer Engineering (CPEN) Electives:**

**Electrical Engineering Courses:**

EE 4245 Digital Signal Processing  
EE 4340 Semiconductor Materials and Devices  
EE 4345 Hardware Digital Signal Processing  
EE 4360 VLSI Design  
EE 4440 Communication Theory  
EE 4590 Real Time Embedded Systems  
EE 4870 Computer Network Hardware  
EE 4990 Advanced Microprocessors  
EE 5390 Computer Architecture  
EE 5410 Neural and Fuzzy Systems  
EE 5430 3-D Computer Vision  
EE 5440 Geometric/Deep Computer Vision  
EE 5460 Probabilistic Robotics  
EE 5670 Digital Image Formation  
EE 5620 Digital Image Processing  
EE 5630 Advanced Image Processing  
EE 5650 Object and Pattern Recognition  
Multicore Programming/GPGPU for HPC  
Network Programming and Congestion Control  
EE 4800 Autonomous Cyber-Physical Systems  
EE 4800 Intro to Quantum Computing  
EE 4800/5885 Modeling of Adv. Robot Systems  
EE 5885 Deep Reinforcement Learning and Control  
EE 5885 Haptic Robotics  
EE 5885 AI for Multi-agent Systems  
EE 5885 Explainable AI (XAI)  
EE 5885 Distributed Algorithms  
EE 5885 Adv in 3D Computer Vision  
EE 5885 Intro to Cooperative Robotics  
EE 5885 Advances in Deep Learning  
EE 5885 Intro to Quantum Cryptography

**Bioengineering Courses:**

BE 5410 Rehabilitation Engineering

**Math Courses:**

Math 4500 Matrix Theory

**Computer Science Courses (max of 2):**

COSC 3020 Algorithms and Data Structures  
COSC 3765 Computer Security  
COSC 4010 nUWtech Lab Development  
COSC 4010/5010 Introduction to Deep Learning  
COSC 4010/5010 Intro to VR/AR  
COSC 4210 Web Application Development  
COSC 4220 Design and Implementation of Emerging Environments  
COSC 4450 Computer Graphics  
COSC 4550 Introduction to Artificial Intelligence  
COSC 4555 Machine Learning  
COSC 4560 Modern Robots and Softbots

COSC 4730 Mobile Applications Programming  
COSC 4735 Advanced Mobile Programming  
COSC 4740 Operating Systems Design  
COSC 4760 Computer Networks