ARTIFICIAL INTELLIGENCE AND CLOUD COMPUTING (AICC)

AICC 110 Introduction to Artificial Intelligence
(4 Credits, Fall)
Students discover the foundations of artificial intelligence (AI) in this introductory course, offering a comprehensive exploration of AI's history and its anticipated future. Through a non-technical overview, the course will delve into the various facets of this transformative technology. Students engage with hands-on computer-based scenarios that showcase AI's practical applications to real-world problems. The course challenges participants to navigate the ethical considerations associated with artificial intelligence and respond thoughtfully. PREREQ: Artificial Intelligence and Cloud Computing major or PERM/INST. *(2 lecture hours, 4 lab hours, 4 credits)*

AICC 120 Introduction to Python Programming and the Cloud
(4 Credits, Fall)
Students explore Python programming within the context of the Artificial Intelligence program. This course covers the essentials of the Python language, presenting both foundational elements and advanced topics. Students gain proficiency in accessing and processing web-based data, acquiring skills directly applicable to the field of artificial intelligence. PREREQ: Artificial Intelligence and Cloud Computing major or PERM/INST. PRE/COREQ: AICC 110. *(2 lecture hours, 4 lab hours, 4 credits)*

AICC 130 Linux for Artificial Intelligence and Cloud Computing
(4 Credits, Fall)
Students acquire essential skills in using Linux for program execution, data preprocessing, and connectivity to cloud-based resources in the context of artificial intelligence with a focus on command-line execution techniques applicable to both local and remote servers. This course is designed to equip students with the practical knowledge necessary for the effective utilization of Linux in the realm of artificial intelligence. PREREQ: Artificial Intelligence and Cloud Computing major or PERM/INST. PRE/COREQ: AICC 120. *(2 lecture hours, 4 lab hours, 4 credits)*

AICC 150 Python for Artificial Intelligence
(4 Credits, Spring)
Students explore the integration of Python into data analysis and the incorporation of artificial intelligence in data processing. This course guides students in utilizing Python alongside industry-standard libraries. Examples of these could be NumPy, Pandas, Matplotlib, Seaborn, and more. Students gain hands-on experience in leveraging Python for effective data analysis, equipping themselves with practical skills for integrating artificial intelligence into data-centric workflows. PREREQ: AICC 120. *(2 lecture hours, 4 lab hours, 4 credits)*

AICC 160 Math for Artificial Intelligence
(4 Credits, Spring)
Students explore the symbiotic relationship between mathematics and artificial intelligence in this course. Essential concepts such as Linear Algebra, Vector Mathematics, and General Linear Models, are learned through hands-on experience utilizing computers to create and analyze mathematical equations within the realm of artificial intelligence applications. For a solid foundation, it is recommended that students complete both Precalculus I: Algebra (MATH 143) and Statistical Reasoning (MATH 153) before enrolling. PREREQ: MATH 143 or MATH 153. *(2 lecture hours, 4 lab hours, 4 credits)*

AICC 170 Database, Data Mining, and Big Data
(4 Credits, Spring)
Students explore the fundamentals of databases and tools in tandem with artificial intelligence to extract meaningful insights. The course addresses the art of data mining: sorting through vast datasets to unveil patterns and relationships and offering solutions to real-world business challenges through data analysis. Students delve into the realm of big data, harnessing expansive datasets that continue to grow year by year. PRE/COREQ: AICC 150 and AICC 160. *(2 lecture hours, 4 lab hours, 4 credits)*

AICC 210 Machine Learning
(4 Credits, Fall)
Machine Learning (ML) is a basic building block of artificial intelligence. This course will introduce many of the main areas of ML including supervised and unsupervised learning. This hands-on course features practical labs reinforcing key concepts alongside current-event-based content. PREREQ: AICC 170 and MATH 153. *(2 lecture hours, 4 lab hours, 4 credits)*

AICC 220 Artificial Intelligence for Business
(4 Credits, Fall)
Students uncover high-impact business solutions with artificial intelligence (AI). The course explores strategic applications of AI across various business domains, including expert systems, robotic automation, and decision support. Students will engage in hands-on analysis and solution implementation to maximize returns in the business environment. PREREQ: AICC 160. PRE/COREQ: AICC 210. *(2 lecture hours, 4 lab hours, 4 credits)*

AICC 230 Artificial Intelligence and Cloud Computing
(4 Credits, Fall)
Students explore the expanding landscape of data migration to cloud resources in this course, focusing on essential skills for applying artificial intelligence on cloud platforms. Topics encompass account setup, experiment design and execution, monitoring, and seamless integration of workflows with local resources. PREREQ: AICC 160 and MATH 153. *(2 lecture hours, 4 lab hours, 4 credits)*

AICC 250 Computer Vision
(4 Credits, Spring)
Students delve into the concepts of computer interaction with video and camera technologies in this course. The course explores the application of artificial intelligence (AI) to detect features and custom objects, a crucial aspect of AI technology in today's context. PREREQ: AICC 210. *(2 lecture hours, 4 lab hours, 4 credits)*

AICC 260 Natural Language Processing
(4 Credits, Spring)
Students discover Natural Language Processing (NLP), where artificial intelligence is harnessed to empower computers to understand text and spoken words akin to human comprehension. Students will gain theoretical knowledge and hands-on experience through practical labs, preparing for the implementation of NLP in professional settings. PREREQ: AICC 210 and MATH 153. *(2 lecture hours, 4 lab hours, 4 credits)*

AICC 270 Artificial Intelligence for Cybersecurity and the SOC
(4 Credits, Spring)
Students explore and master artificial intelligence techniques employed in cybersecurity. Acquiring skills in detecting spam, malware, intrusion detection, and other security measures, students will engage in a hands-on project focused on the Security Operations Center (SOC), involving real-world data for security analysis, processing, and the implementation of reactions to malicious data. PREREQ: AICC 230. *(2 lecture hours, 4 lab hours, 4 credits)*