CLOUD ENGINEERING TECHNOLOGY (CLDE), AAS

OVERVIEW

At Dunwoody College of Technology, the Cloud Engineering Technology program prepares graduates for careers building and managing cloud computing solutions for businesses and organizations. Graduates enter the field in positions such as cloud architect/engineer, network architect/engineer, DevOps engineer, or systems engineer.

Students learn to build, automate, deploy, test, run, and manage cloud-based solutions that meet real world business needs. An emphasis is placed on hands-on projects, including lots of practice with the two leading platforms: Amazon Web Services (AWS) and Microsoft Azure.

Coursework includes cloud architecture, HTML, CSS, JavaScript, GitHub, cloud native practices, DevOps, containers, Docker, Python, databases, SQL, NoSQL, application security, microservices, serverless computing, and more. Interpersonal soft-skills are emphasized in all courses.

Arts & Sciences courses enhance and support the technical coursework.

Credits earned in the Cloud Engineering Technology AAS program directly transfer into Dunwoody's Cybersecurity Bachelor of Science (https://catalog.dunwoody.edu/catalog-student-handbook/academic-programs/computer-technology/cybersecurity-cybr-bs/) program.

Credential Earned: AAS
Length of Program: 2 years (4 semesters)
Classes Offered: Day on Campus or Evening Online Hybrid
Available Starts: Fall Semester; Spring Semester

PROGRAM OUTCOMES

- Design and secure fault tolerant enterprise networks
- Implement and manage virtual server farms
- Automation of cloud network and service deployment
- Deploy, manage, and optimize applications in multiple enterprise cloud environments
- Securely extend and connect on-premises and public clouds
- Architect cloud solutions based on business use cases

DEGREE REQUIREMENTS

Code	Title	Credits
General Education		
MATH1000	Algebra & Trigonometry	3
MATH1250	Boolean Algebra	3
Communications		3
Humanities		3
Social Science		3
Technical Credits		
CLDE1110	Introduction to Cloud Services	2
CDEF1110	Introduction to Cyber Defense	2
CNTS1102	Introduction to Operating Systems	2
CNTS1123	Introduction to Networking	2
CWEB1114	Introduction to Application Dev	2
CWEB1123	Data Fundamentals	2
CNTS1212	Server Systems	3
CLDE1210	Cloud Architecting	3
CNTS1202	Scripting	3
CNTS1232	Network Systems	3
CLDE2110	Cloud Security	3
CLDE2120	Cloud Database Systems	3
CNTS2113	Enterprise Linux Administration	3
CNTS2131	Virtualization	3
CLDE2210	Hybrid Cloud Management	3
CLDE2230	Cloud Enterprise Systems	3
CLDE2292	Summative Experience	3
Total Hours:		65

COURSES

CLDE1110 | Introduction to Cloud Services | Lecture/Laboratory (2 Credits)
Exploration of the technology and terms used in modern cloud services. Portions of this course help to prepare for the Amazon Cloud Practitioner exam.

CDEF1110 | Introduction to Cyber Defense | Lecture/Laboratory (2 Credits)
To provide students with a broad understanding of the field of Cyber defense, inspire curiosity, and set a foundation for more indepth cybersecurity focused courses in the future.

CNTS1102 | Introduction to Operating Systems | Lecture/Laboratory (2 Credits)
Examine concepts of computer operating systems found in the datacenter. Navigation and manipulating of the file systems using command line and GUI interfaces of current Linux and Windows operating systems to gain an understanding of how they work, their similarities and differences. Portions of this course help to prepare for the CompTia A+ exam.

CNTS1123 | Introduction to Networking | Lecture/Laboratory (2 Credits)
Introduction to the concepts and terminology of data communications in a datacenter. Examine client-server networking, communication hardware, software, and security. Analyze services and models supporting data communications interoperability. Configure and troubleshoot network connections and the associated hardware/software.

CWEB1114 | Introduction to Application Dev | Lecture/Laboratory (2 Credits)
Code responsive, secure web app using HTML, CSS, JavaScript and server-side language while understanding the Software development life cycle and modern development methodologies.

CWEB1123 | Data Fundamentals | Lecture/Laboratory (2 Credits)
Examine the concepts of data and logical structures of data. Explore database types including relational, hierarchical, and graph data structures, and common search algorithms and query structures. Build a relational database using MySQL workbench. Utilize Structured Query Language (SQL) core skills (Queries, operators and keys).

CNTS1212 | Server Systems | Lecture/Laboratory (3 Credits)
Install, configure, maintain, and manage the core services in current Linux and Windows server operating systems. Introduction to the sharing of system resources, remote administration, directory services security and backups. Portions of this course help to prepare for the Microsoft Identity and Access Administrator exam.

CLDE1210 | Cloud Architecting | Lecture/Laboratory (3 Credits)
Architecting business solutions for modern cloud services utilizing industry best practice concepts. Portions of this course help to prepare for the Amazon Cloud Architect Associate exam.

CNTS1202 | Scripting | Lecture/Laboratory (3 Credits)
Apply programming best practices to managing computer systems and networks. Topics include: development of real world scripts used to manage enterprise networks with a focus on Python and PowerShell.

CNTS1232 | Network Systems | Lecture/Laboratory (3 Credits)
Expansion of concepts and terminology of business data communications and how they apply to the business environment. Intermediate to advanced client-server networking concepts, including its associated networking hardware, addressing and services; logical addressing, IP routing, and network protocols. Install and configure client-server networking systems. Portions of this course help to prepare for the CompTIA Network+ exam.

CLDE2110 | Cloud Security | Lecture/Laboratory (3 Credits)
Utilize best practice concepts in securing modern cloud services. Portions of this course help to prepare for the Amazon Security Specialty exam.

CLDE2120 | Cloud Database Systems | Lecture/Laboratory (3 Credits)
Build secure, durable and scalable database solutions for modern cloud services. Portions of this course help to prepare for the Amazon Database Specialty exam.

CNTS2113 | Enterprise Linux Administration | Lecture/Laboratory (3 Credits)
Install, configure, maintain, and manage a wide variety of Open Source Software (OSS) with an emphasis on common web, file and database servers found in industry; the history of the open source movement. Configure OSS operating systems to support common client-servers, Web hosting, and other services commonly found at the enterprise and ISP levels of industry. In-depth coverage of technologies related to hosting websites including programming language support, database support/connectivity, and remote access. Portions of this course help to prepare for the Red Hat Certified Engineer exam.

CNTS2131 | Virtualization | Lecture/Laboratory (3 Credits)
Install, configure, maintain, and manage a variety of virtualization software; examine the underlying principles of virtualization; create a virtual IT infrastructure; advantages and disadvantages of moving to a virtualized environment; comparison of major virtualization software systems. Portions of this course help to prepare for the Professional VMware vSphere Exam.

CLDE2210 | Hybrid Cloud Management | Lecture/Laboratory (3 Credits)
Design and implement integrated environments of on-premises and public cloud services that enable flexibility and the ability to migrate workloads, while maintaining data security and compliance. Portions of this course help to prepare for the Red Hat CloudForms Hybrid Cloud Administration exam.

CLDE2230 | Cloud Enterprise Systems | Lecture/Laboratory (3 Credits)
Evaluate cloud application requirements and make architectural recommendations for secure implementation, deployment, and provisioning. Portions of this course help to prepare for the Amazon Solutions Architect Professional exam.

CLDE2292 | Summative Experience | Directed Study (3 Credits)
Portfolio or external intern based project work to exhibit all skills gained throughout program.

MATH1000 | Algebra & Trigonometry | Lecture (3 Credits)
Real numbers and polynomials, exponents and radicals, fractional equations; proportions and linear equations; trigonometric functions, solutions of triangles, radians, trig functions graphs, vectors, and basic identities.
General Education: Mathematics

MATH1250 | Boolean Algebra | Lecture (3 Credits)
Binary, octal and hexadecimal number systems. Boolean algebra and mapping.
General Education: Mathematics