

WEB PROGRAMMING & DATABASE DEVELOPMENT

Common Job Titles	Recent Employers	Salary Data	Placement Rate
Software Developer Web Specialist Agile Business Analyst	Design Ready Controls Magenic Technologies MMIC United Health Group Vickerman Company	\$70,610* Annual Average Salary	90%**

Program Information

The Web Programming & Database Development program provides graduates with the necessary skills and knowledge to design, create, and maintain websites. While the goal of user-friendly, efficient, and appealing website design is expected, adherence to industry standards and best practices is paramount.

Typical job titles for graduates of the program include web developer, webmaster, database administrator, data analyst, web designer, content manager, and software developer. Students learn responsive web development; client and server-side scripting; object-oriented languages; industry-standard database creation and management; secure coding practices and programming logic; current industry project management techniques; basic user interface and user experience principles; data structures; and structured query language (SQL) within multiple database systems. They also learn how to use Windows and Linux (*nix) based systems.

Courses are divided between content lectures and hands-on demonstrations and practice. Arts & Sciences curriculum enhances the skills necessary for students to be successful in their careers. These courses include technical writing, communication, and math courses designed specifically for computer students. The program culminates in a comprehensive final/capstone that incorporates the knowledge learned throughout the program. A shorter certificate option is also available.

Dunwoody College of Technology: a non-profit, private technical college since 1914.




Credential Earned	AAS Degree
Classes Offered	Day
Length of Program	2 years (4 semesters)
Available Starts	Fall Semester; Spring Semester
Further Study	Bachelor's Completion Degree in Computer Systems Analysis or Applied Management with a concentration in Management Information Systems (MIS)

Degree Requirements

CNTS1111	Computer Systems
CNTS1121	Network Fundamentals
CWEB1010	Introduction to Web Development
CWEB1110	Programming Fundamentals I
CWEB2101	Business Architecture
CWEB1111	Programming Fundamentals II
CWEB1120	Data Organization
GAPT1150	Introduction to Color Theory
CWEB2010	Advanced Programming
CWEB2020	Database Servers
CWEB2111	Web Publishing
GAPT2120	Web Graphics
CNTS2223	Open Source Software
CNTS2250	Career Preparation
CWEB2011	Business Applications
CWEB2121	Database Systems
CWEB2135 [^]	Advanced Topics
MATH1250	Boolean Algebra
MATH1050	Algebra, Trigonometry & Geometry
COMM1150	Interpersonal Communication Social Sciences Elective Humanities Elective
WRIT2010	Technical Writing Diversity Elective

[^] Or take CWEB2131 Internship I and CWEB2132 Internship II
Or take CWEB2133 Internship III

How to Apply

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	612.374.5800
	info@dunwoody.edu

DUNWOODY
COLLEGE OF TECHNOLOGY

*Based on May 2016 State Occupational Employment and Wage Estimates for the state of Minnesota published by the Bureau of Labor Statistics, www.bls.gov.
**Data reflects placement for AY2016-17 graduates indicating employment in their field of study within 6 months following graduation.
Full data calculations are available for review during College open hours Monday through Friday 8 a.m. to 4 p.m. CT at Career Services or contact careerservices@dunwoody.edu.
AY2018-19 Revised: 6.18.18

Course Descriptions

CNTS1111 Computer Systems, 4 cr.

Apply electronic theory, Boolean logic, utilization of hex editors and assembly language to understand the underpinning technologies that make computers systems work. Maintenance and repair of computer operating systems, hardware, peripherals, and component selection/installation for machines commonly found in a business.

CNTS1121 Network Fundamentals, 3 cr.

Concept and terminology introductions, data communications in a business environment. Client-server networking; communication hardware, software, and basic security is introduced. Services and models supporting data communications interoperability introduced. Configure and troubleshoot basic network connections and the hardware/software associated.

CWEB1010 Introduction to Web Development, 3 cr.

Hypertext Markup Language (HTML). Basic page structure, tags, link, text formatting, forms, tables, and debugging with trouble-shooting skills. Cascading Style Sheets (CSS), advanced formatting, and layout. Integration of web scripting languages (like Javascript) into existing web pages to increase user-friendliness and functionality. Creation of scripts for new pages.

CWEB1110 Programming Fundamentals I, 4 cr.

Basic programming principles like data types, variables, expressions, operators, Boolean logic, algorithm creation, flowcharts. Structured programming and programming logic constructs (sequence, selection, and loops). Abstraction, modularization, dynamic and static data-structures, object-oriented and event driven programming.

CWEB2101 Business Architecture, 4 cr.

Business concepts such as human resource development, marketing, investing, security, legal, and entrepreneurship. Various development approaches for software development from traditional systems analysis to contemporary methods (like Agile) and beyond. Develop models and prototypes to practice the processes and techniques needed to design and build quality software systems.

CWEB1111 Programming Fundamentals II, 3 cr.

Intermediate programming principles like abstraction, modularization, dynamic and static data-structures, object-oriented and event driven-programming more in-depth. Classes and inheritance. Program construction, software creation problem-solving. Programming structures and coding recipes. Concrete application of concepts using easy-to-use but fully functional programming languages. Visual coding and environments. Game theory including collision and boundary detection.

CWEB1120 Data Organization, 4 cr.

Language syntax, document model, document types, schemas and stylesheets from EXtensible Markup Language (XML) with a focus on creating structured content and data for business application. Integration of relational database concepts and design of database management systems for enterprise information needs. Data modeling with Unified Modeling Language (UML) and Structured Query Language (SQL) used for data definition to construct physical databases, for data manipulation and for data computation.

GAPT1150 Introduction to Color Theory, 1 cr.

The importance and power of color in graphic communication, brand identity, and color reproduction. Color psychology, science and applications. Hands-on exploration of RGB, LAB and CMYK color spaces.

CWEB2010 Advanced Programming, 4 cr.

Create windows based applications. High level, event driven programming language concepts with an emphasis on user interface. Advanced object-oriented languages.

CWEB2020 Database Servers, 3 cr.

Database server technology for enterprise-class data services and complex business logic. Server architecture, data integrity, data types, indexing, constraints, stored procedures, database schemas, normalization, data warehouses, data mining, data cubes.

CWEB2111 Web Publishing, 3 cr.

Techniques central to web publishing. Open-source and proprietary languages built for the web. Tools used to publish content online. Interactive, data-driven web applications for web storefronts. Scripting templates, databases, file system, directories and other enterprise systems for developing web application services.

GAPT2120 Web Graphics, 2 cr.

Introduction to web design from creating wire frames to finished html templates for web sites. Emphasis is on web page layout and the creation and formatting of the graphic elements on a web page.

CNTS2223 Open Source Software, 4 cr.

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.

CNTS2250 Career Preparation, 1 cr.

Design a business resume, cover letter and thank you letter; implement a job search strategy; and submit resume, cover letter and thank you letter in search of an entry level job. Assemble artifacts for a student portfolio, create the portfolio, and present it to industry professionals.

CWEB2011 Business Applications, 4 cr.

Transition of static hypertext markup language (HTML) web sites to complex data integrated applications. Server-side scripting. Differentiate between coding a page and coding a site or full project. Customize and integrate many complex pieces of code and parts of a web site into a single cohesive web application.

CWEB2121 Database Systems, 2 cr.

Structured Query Language, database normalization, database management systems (DBMS), implementation-independent database design, and security.

CWEB2135 Advanced Topics, 3 cr.

Emerging technologies advanced topics. Career preparation work. Perfecting job skills. Resumes, cover letters, interview skills. Portfolio or external project work to exhibit all skills gained throughout program. Seminar/independent study format.

CWEB2131 Internship I, 1 cr.

Practice skills in an approved, professional, external, commercial entity for a minimum of 54 hours.

CWEB2132 Internship II, 2 cr.

Practice skills in an approved, professional, external, commercial entity for a minimum of 108 hours.

CWEB2133 Internship III, 3 cr.

Practice skills in an approved, professional, external, commercial entity for a minimum of 162 hours.

MATH1250 Boolean Algebra, 3 cr.

Binary, octal and hexadecimal number systems. Boolean algebra and mapping.

MATH1050 Algebra, Trigonometry & Geometry, 3 cr.

Principles of algebra, geometry and trigonometry used in the context of a technical setting. Problem-solving strategies are developed and applied to technology.

COMM1150 Interpersonal Communication, 3 cr.

Analyze the process of interpersonal communication as a dynamic and complex system of interactions. Integrate interpersonal communication theory into work, family and social relationships. Apply fundamental tools needed to provide quality customer service. Decision making, problem solving, and managing customer service processes are emphasized.

WRIT2010 Technical Writing, 3 cr.

Technical writing applications are studied for format, style, voice, and point of view; considered for purpose, audience, and subject. Critical thinking and developed expertise are employed to analyze, interpret, evaluate, summarize and generate various technical documents, individually and within teams.