



BETHLEHEM AREA

VOCATIONAL-TECHNICAL SCHOOL

3300 CHESTER AVENUE, BETHLEHEM, PA 18020-2870

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Web Page, Digital/Multimedia & AI Integration

Syllabus

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Course Description

The Web Page, Digital/Multimedia and AI Integration program is a three-year Career and Technical Education program at Bethlehem Area Vocational-Technical School.

The program prepares students for careers in web development, user experience design, digital marketing, and emerging AI-supported technologies.

Students begin by learning the foundations of computer operations, digital design principles, and web technologies. They progress into HTML, CSS, and JavaScript development, learning how to build modern websites and interactive web applications.

Advanced students explore user experience design (UX/UI), accessibility standards, content management systems (CMS), search engine optimization (SEO), and digital marketing strategies.

Senior students study AI integration in digital workflows, professional development practices, and complete a capstone portfolio project demonstrating career-ready skills.

Students leave the program with a professional portfolio and the ability to continue into college, apprenticeships, internships, or technology careers.

Program Philosophy

The Web Page, Digital/Multimedia and AI Integration program prepares students for both college and career pathways in technology and digital media.

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Students develop:

- Technical web development skills
- Creative problem-solving ability
- Ethical technology practices
- Professional communication skills

Through project-based learning, students gain experience working in a studio-style environment that mirrors the expectations of modern technology workplaces.

Students are encouraged to take ownership of their learning and build professional portfolios that demonstrate their skills and creativity.

Studio Learning Environment

This classroom operates as a digital design and development studio.

Students will work on projects similar to those encountered in professional environments such as:

- Designing websites for specific audiences
- Planning user experiences and layouts
- Building interactive web features
- Presenting work and receiving critique
- Managing project deadlines and revisions

Students are expected to approach their work with professionalism and respect for the studio environment.

Constructive critique and feedback are part of the design process. Students will learn how to give and receive feedback professionally.

SkillsUSA Participation

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SkillsUSA is the national Career and Technical Student Organization (CTSO) for career and technical education students.

All students in this program are expected to join SkillsUSA.

Participation allows students to:

- Develop leadership skills
- Participate in technical competitions
- Build professional communication skills
- Represent Bethlehem AVTS at regional and state events

Possible competition areas include:

- Web Design
- Interactive Application Development
- Digital Media Production
- Prepared Speech or Extemporaneous Speaking

SkillsUSA helps students develop professional confidence and leadership experience.

AI use is not permitted in CTSO competitions unless explicitly allowed by competition rules.

Artificial Intelligence (AI) Use Policy

Artificial intelligence tools are increasingly used in modern web development, design, and digital communication. In this program, students learn how to use AI responsibly, ethically, and professionally.

This course follows the BAVTS AI Code of Ethics & Acceptable Use Policy.

AI may be used to support learning but may not replace student thinking or original work.

Submitting AI-generated work as one's own is considered academic dishonesty.

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Appropriate Uses of AI

AI may be used when allowed by the instructor for tasks such as:

- Brainstorming ideas
- Organizing notes or research
- Improving grammar or clarity
- Exploring concepts or explanations

AI should support learning rather than replace student effort.

Instructor Authority

AI use is always subject to instructor direction.

Assignments may be labeled:

AI-Free – AI use is not allowed

AI-Supported – AI may be used with disclosure

Using AI when it is prohibited is considered cheating.

Transparency and Citation

All AI use must be disclosed.

Students must clearly indicate when AI tools are used in a project or assignment.

Example:

"AI assistance used for brainstorming layout ideas."

Hidden or undisclosed AI use violates academic integrity.

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Accuracy and Accountability

Students are responsible for the accuracy and understanding of any work submitted.

Students must:

- Fact-check AI information
- Verify sources
- Understand the code or content they submit
- Be able to explain their work in their own words

Privacy and Safety

Students may not enter personal or private information into AI tools, including FERPA-protected information such as student names, grades, or personal records.

Only school-approved tools may be used when required.

Consequences for Misuse

Violations of the AI policy may result in consequences according to the school's Academic Honesty Policy and Acceptable Use Policy.

Misuse includes:

- Submitting AI-generated work without disclosure
- Using AI during AI-free assignments
- Using AI on tests or assessments

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Grading Policy

Student grades reflect both technical skill development and professional behavior.

Grades are based on:

Projects and Technical Work

Students complete hands-on projects such as:

- Websites
- Design projects
- Programming exercises
- UX/UI design work
- Portfolio pieces

Projects are evaluated based on:

- Technical accuracy
- Design quality
- Creativity
- Completion of required features
- Professional presentation

Skill Development

Students are assessed on competencies including:

- HTML and CSS development
- JavaScript fundamentals
- User experience design
- Web accessibility
- CMS management
- Digital marketing fundamentals
- AI-assisted workflows

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Professional Habits

Students are also evaluated on professional skills including:

- Work ethic
- Time management
- Collaboration
- Communication
- Responsibility with equipment
- Participation in discussions and critiques

Portfolio Development

Students maintain a professional digital portfolio throughout the program.

This portfolio demonstrates:

- Technical skills
- Creative development
- Problem-solving ability
- Career readiness

Portfolio development is a major component of the Level 3 Capstone Project.

Program Progression

Level 1 – Foundations (Grade 10)

Students begin with an exploratory rotation and then build foundational skills in digital technology and design.

Topics include:

- Computer operations and IT fundamentals

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- Digital design principles
- HTML web structure
- CSS styling and layout
- Introduction to user experience design

Students complete their first multi-page website project.

Level 2 – Advanced Web Development (Grade 11)

Students expand into more advanced development topics including:

- Advanced HTML and CSS
- UX/UI planning and accessibility
- JavaScript programming
- CMS website management
- Search engine optimization
- Website analytics

Students complete a fully developed website project demonstrating advanced skills.

Level 3 – Professional Practice (Grade 12)

Students focus on industry preparation and professional projects.

Topics include:

- Digital marketing strategies
- Branding and identity systems
- AI integration in design and development
- Industry certification preparation
- Portfolio and capstone development

Students complete a capstone website project and professional portfolio.

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Career Pathways

Students completing this program may pursue careers such as:

- Web Developer
- Front-End Developer
- UX/UI Designer
- Digital Content Creator
- Website Administrator
- Digital Marketing Specialist
- SEO Specialist
- CMS Developer
- Digital Product Designer

Emerging Career Path

AI Prompt Engineer

AI Prompt Engineers specialize in designing instructions that guide artificial intelligence systems to produce effective and accurate results.

Responsibilities may include:

- Designing prompts and workflows for AI systems
- Testing and refining AI outputs
- Integrating AI into digital production workflows
- Evaluating ethical and responsible AI use

Students in this program will develop foundational skills in AI prompting, evaluation, and integration.

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Web Page, Digital/Multimedia and AI Integration (CIP 11.0801)

Scope and Sequence with time allocations

Student Entry Point: Grade 10 (Sophomore Year)

Instructional Model: 2.5-hour blocks

Each academic year consists of approximately 425 instructional hours.

Each marking period equals approximately 106.25 hours.

Grade 10 – AM (Exploratory + Foundations)

Marking Period	MP1 (~106.25 hrs)	MP2 (~106.25 hrs)	MP3 (~106.25 hrs)	MP4 (~106.25 hrs)
Technical Content & Time Allocation	Exploratory Rotation (10 days – ~25 hrs) <ul style="list-style-type: none"> • Safety & Ergonomics (101-107, 104) – 8 hrs • Digital Citizenship (105-106) – 5 hrs • Vector Graphics Intro (801, 812) – 7 hrs • HTML Editor Exposure (1502) – 5 hrs (Exploratory – No Proficiency)	Digital Foundations & Design Literacy (~106.25 hrs) <ul style="list-style-type: none"> • IT Foundations (301-309) – 26 hrs • Computer Applications (401, 403) – 26 hrs • Computer Operations (501, 503-509) – 27 hrs • Design Fundamentals (810-814) – 27.25 hrs 	HTML Structure & Web Basics (~106.25 hrs) <ul style="list-style-type: none"> • Network Fundamentals (601-609) – 30 hrs • HTML Structure (1501-1509, 1511) – 76.25 hrs 	CSS Basics & UX Awareness (~106.25 hrs) <ul style="list-style-type: none"> • CSS Foundations (1601-1609) – 50 hrs • Layout & Design (901-905) – 36.25 hrs • Presentation (1102) – 20 hrs

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Grade 11 – PM (Advanced Development)

Marking Period	MP1 (~106.25 hrs)	MP2 (~106.25 hrs)	MP3 (~106.25 hrs)	MP4 (~106.25 hrs)
Technical Content & Time Allocation	Advanced HTML & CSS (~106.25 hrs) <ul style="list-style-type: none">• HTML5 Structure (1501-1524) – 53 hrs• CSS Advanced (1601-1611) – 53.25 hrs	UX/UI, Accessibility & Ethics (~106.25 hrs) <ul style="list-style-type: none">• Design Planning (902-908) – 40 hrs• Accessibility (1208) – 26.25 hrs• Legal/Ethical Use (1203-1210) – 40 hrs	JavaScript Fundamentals (~106.25 hrs) <ul style="list-style-type: none">• Logic & Events (1701-1707) – 106.25 hrs	CMS, SEO & Analytics (~106.25 hrs) <ul style="list-style-type: none">• CMS Management (1801-1807) – 60 hrs• SEO Basics (1901-1903) – 46.25 hrs

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Grade 12 – PM (Professional Practice & Capstone)

Marking Period	MP1 (~106.25 hrs)	MP2 (~106.25 hrs)	MP3 (~106.25 hrs)	MP4 (~106.25 hrs)
Technical Content & Time Allocation	Internet Marketing & Branding (~106.25 hrs) <ul style="list-style-type: none"> • Marketing Strategy (1901-1910) – 66.25 hrs • Branding Systems (805) – 40 hrs 	AI in Design & Development (~106.25 hrs) <ul style="list-style-type: none"> • AI Ethics & Prompting (2001-2007) – 56.25 hrs • Security & Ethics (1201-1206) – 50 hrs 	Legacy Web Standards & NOCTI Readiness (~106.25 hrs) <ul style="list-style-type: none"> • NOCTI Written Review – 36.25 hrs • NOCTI Performance Practice – 50 hrs • Legacy vs Modern Reflection – 20 hrs 	Capstone & Career Readiness (~106.25 hrs) <ul style="list-style-type: none"> • Portfolio Development (1301-1305) – 36.25 hrs • Client Relations (1401-1406) – 50 hrs • Presentation & Defense (1102-1113) – 20 hrs

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Appendix A – Related Academic Standards Crosswalk

Web Page, Digital/Multimedia and Information Resource Design (CIP 11.0801)

This crosswalk identifies Pennsylvania academic standards that are naturally reinforced through technical instruction and project-based learning within the Web Page, Digital/Multimedia and Information Resource Design program. Academic standards are integrated authentically through writing, problem-solving, analysis, presentation, and client-based work.

English Language Arts (PA Core)

Standard Area	Standard Focus	Program Alignment
Reading Informational Text	Analysis of technical texts and digital content	Students analyze website content, documentation, policies, and client requirements.
Writing	Informative, technical, and persuasive writing	Students write website copy, proposals, accessibility statements, reflections, and portfolios.
Speaking & Listening	Presentation and collaborative discussion	Students present projects, conduct critiques, and participate in client meetings.
Language	Conventions and domain-specific vocabulary	Students apply professional grammar, terminology, and tone in digital content.

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Mathematics (PA Core)

Standard Area	Standard Focus	Program Alignment
Mathematical Modeling	Applying mathematics to real-world problems	Students calculate dimensions, spacing, proportions, and responsive layouts.
Data Analysis	Interpreting and evaluating data	Students analyze website and social media analytics.
Algebraic Thinking	Variables and logical relationships	Students apply conditional logic and sequencing in JavaScript.

Science, Technology & Engineering (PA STEELS)

Standard Area	Standard Focus	Program Alignment
Technology & Engineering	Use of tools and systems	Students use industry-standard hardware, software, and development tools.
Computational Thinking	Problem decomposition and logic	Students design workflows, debug code, and optimize solutions.
Ethical Use of Technology	Responsible and secure technology use	Students address cybersecurity, privacy, accessibility, and ethical AI use.

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Career Readiness & Employability Skills

Skill Area	Skill Focus	Program Alignment
Communication	Professional written and verbal communication	Students communicate with peers, clients, and stakeholders.
Collaboration	Teamwork and project management	Students work in teams using project timelines and roles.
Problem Solving	Critical thinking and adaptability	Students troubleshoot technical issues and revise designs.
Professionalism	Workplace behaviors and ethics	Students practice time management, accountability, and ethical conduct.

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