

Graphic Design I / Graphic Design II (Honors)

- Acquire advanced skills and enhance layout and design of documents through the use of Adobe Photoshop, Illustrator and InDesign software.
- Attain in-depth knowledge of techniques, elements and principles of design.
- Create, exhibit and critique original artwork and design.
- Use technology to compose original documents and enhance the effectiveness of visual communication.
- Analyze and evaluate media and oral presentations using appropriate vocabulary.

Multimedia I / Multimedia II (Honors)

- Acquire advanced skills in the use of DVD Studio Pro, Adobe After Effects, Macromedia Flash and Final Cut Pro software.
- Create multimedia projects from a conceptual stage and execute to a finished product.
- Import and export data, sound, video clips and still images between software programs.
- Demonstrate knowledge of video editing techniques utilizing storyboarding protocols to finalize presentations.

Introduction to Programming (Honors)

- Acquire an understanding of hardware, software, data storage, conversion between number systems and history of programming.
- Create, develop, implement and test programs using Visual Basic and C++ programming languages.
- Interpret and develop algorithms for programs.
- Identify, select and effectively use a variety of programming statements to perform tasks.
- Perform input and formatted output.
- Identify and debug syntax, logic and runtime errors.

Java Programming (Honors)

- Acquire an understanding of object-oriented programming, data storage, conversion between number systems and computer ethics.
- Identify and develop an understanding of the Java programming language and Borland's Jbuilder IDE.
- Interpret and develop algorithms for programs.
- Design, edit, compile, implement and test Java classes, constructors, methods and programs.
- Identify, select and utilize appropriate programming statements.
- Identify and debug syntax, logic and runtime errors.
- Construct terminal as well as GUI user interfaces.

Computer Science I (Advanced Placement)

- Extend knowledge and skill acquired through Java Programming Honors course.
- Acquire and apply additional syntax, algorithms and data structures using Java programming language.
- Create, develop, implement and test programs using data abstraction, encapsulation, inheritance, arrays, advanced operations on strings, recursion and file I/O.

Students are expected to take the Computer Science Advanced Placement A exam at the end of the course.

Computer Science II (Advanced Placement)

- Acquire and apply advanced topics of Java programming language.
- Identify and implement appropriate searching and sorting algorithms and data structures such as two-dimensional arrays, linked lists, stacks, queues, trees, heaps, sets, maps, etc.
- Analyze and develop Java programs using polymorphism, overloading operators and templates.

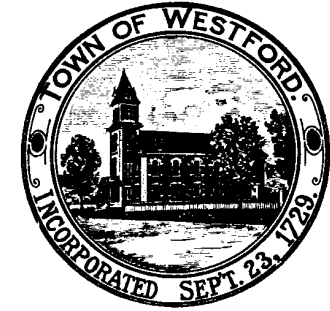
Students are expected to take the Computer Science Advanced Placement AB exam at the end of the course.

Computer and Business Related Activities

- Film Club
- Yearbook
- School Store
- Competitions
 - The American Computer Science League (ACSL)
 - DECA – District, State and International Career Development Conferences
 - Media contests sponsored by local organizations

The Computer and Business Department at Westford Academy offers a large variety of courses in the fields of Computer Science, Visual Communications and Business. Each course prepares the student for college as well as the workplace by incorporating the latest technologies. We take pride in teaching to a large student body with diverse interests.

WESTFORD PUBLIC SCHOOLS



CURRICULUM BENCHMARKS

GRADES 9 – 12

COMPUTER AND BUSINESS

Westford Academy

Compiled by the Computer and Business Curriculum Task Committee
under the direction of
Director of Curriculum and Instruction
Lorraine Tacconi-Moore, Ed.D.

“Shaping the future one child at a time”
<http://westford.mec.edu/>

The Computer and Business Department at Westford Academy takes pride in offering a large variety of courses in the fields of:

- Computer Science
- Visual Communications
- Business

All courses are based on Massachusetts Recommended Instructional Technology Standards, Massachusetts Arts Curriculum Frameworks and/or National Standards of Business Education.

Computer Skills and Applications

- Acquire a strong foundation on MAC and PC platforms.
- Gather, evaluate, organize, synthesize and cite information from online sources.
- Establish e-mail account, utilize e-mail and send messages with attachments.
- Identify, analyze and understand social, legal and ethical responsibility when using technology.
- Design, create and format memos, business letters, reports, tables, brochures and newsletters using Microsoft Word.
- Plan, design and maintain spreadsheets, charts and databases using Microsoft Excel.
- Create presentations with text, images, animation and multimedia using Microsoft PowerPoint.
- Import and export data, text, sound, video and still images between software programs.

Image Editing

- Demonstrate proficiency in the use of MAC computers, Adobe PhotoShop, Illustrator software and various peripheral devices.
- Import and export data, text and still images between software programs.
- Select application software appropriate for specific tasks.
- Analyze, critique and evaluate media and oral presentations.

Web Page Design

- Identify, integrate, assess and evaluate design principles and elements of a web page.
- Acquire and use appropriate web related terminology.
- Access, research, evaluate and organize web site content using online information sources.
- Design and create web sites using HTML as well as Macromedia Dreamweaver.

- Identify the purpose and incorporate text, images, color, links, sound, video, multimedia tables, frames and forms.
- Create, exhibit and critique design of web sites.

Introduction to Visual Basic and Scripting

- Acquire and use appropriate programming and Internet terminology.
- Design and implement user interface using text and graphics in the Visual Basic environment.
- Create, develop, implement and test programs using Visual Basic programming language.
- Select and use programming statements.
- Understand and identify the purpose and use of scripting to make web pages interactive and dynamic.
- Design, create and incorporate a variety of scripts in a web page using VBScript as well as JavaScript.

Marketing I / Marketing II

- Recognize the customer-oriented nature of marketing and analyze the impact of marketing activities on the individual, business and society.
- Analyze the elements of the marketing mix, their interrelationships and how they are used in the marketing process.
- Explore the influence of internal and external factors on marketing.
- Scrutinize the characteristics, motivations and behaviors of consumers.
- Investigate the role of marketing research in decision-making.
- Describe the elements, design and purpose of a marketing plan.

Principles of Management

- Analyze how economic systems, resources and political systems impact business and society.
- Examine the role of ethics and social responsibility in decision-making.
- Explore and question the management functions and their implementation in the business environment.
- Develop personal management skills to function effectively and efficiently in a business environment.
- Scrutinize human resource functions and their importance to an organization's successful operation.
- Describe the role of organized labor and its influence on government and business.

Entrepreneurship

- Recognize that entrepreneurs possess unique characteristics and evaluate the degree to which one possesses those characteristics.
- Research customer groups and develop a plan to identify, reach and retain customers in a specific target market.
- Analyze how economics, forms of business ownership, government regulations and business ethics affect entrepreneurial ventures.
- Develop a comprehensive business plan that incorporates financial competencies, record keeping and a management plan.

Accounting I / Accounting II

- Complete and explain the purpose of the various steps in the accounting cycle.
- Apply generally accepted accounting principles to determine the value of assets, liabilities and owner's equity.
- Prepare, interpret and analyze financial statements using manual and computerized systems for service, merchandising and manufacturing businesses.
- Apply appropriate accounting principles to payroll, income taxation, managerial systems and various forms of ownership.
- Use accounting software to maintain accounting records for sample businesses and generate reports.

Law I / Law II

- Analyze and describe the relationship between ethics and the law, sources of the law, structure of the court system and classifications of procedural / substantive law.
- Examine the relationship between contract law, law of sales and consumer law.
- Explain the legal rules that apply to personal property and real property.
- Determine the appropriateness of wills and trusts in estate planning.
- Analyze the laws dealing with terrorism in the United States and other countries.
- Identify the legal rules that apply to marriage, divorce and child custody.
- Explain the legal rules that apply to environment and energy regulation.
- Compare and contrast laws and trial systems of other countries to the United States.