

Course: Assistive Technology  
PEIMS Code: N1260002  
Abbreviation: ATECH  
Grade Level(s): 9-12  
Number of Credits: 1.0

*Course description:*

This course will provide instruction in assistive technology. Assistive technology provides access to print and electronic information using screenreading software, screen magnification software/hardware, scanning and reading, braille access, voice recognition and switches. This course will educate students about a variety of technology choices to match the needs of individuals, and educate students who are interested in broadening their scope of technology, mainstream applications and specialized devices.

Students will learn and apply basic and assistive technology skills to access instructional materials and produce work. These skills include switch access, keyboarding, operating system navigation, file management, Internet browsing, word processing, presentation software and spreadsheets, and programs and devices specifically designed for students with visual impairments and those who struggle with reading.

*Essential knowledge and skills:*

(a) Introduction

All students need to develop computer literacy skills in order to compete in the classroom and the workplace. Through learning how to use assistive technology to meet their own or other individuals' needs, along with learning to competently use mainstream technology, students will be able to make informed decisions regarding selecting appropriate technology for specific tasks. Most of the essential knowledge and skills in this course will be addressed using screenreading and/or screen magnification software.

(b) Knowledge and Skills

- (1) The student demonstrates keyboarding skills using accessible strategies. The student is expected to:
  - (A) use magnification or screenreading software on note-takers and mobile devices with instructional typing applications;
  - (B) demonstrate finger placement on home row keys by locating tactile markers;
  - (C) demonstrate correct reaches on home, top, number, and bottom row keys through auditory or magnified verification;

- (D) demonstrate knowledge and location of navigation and function keys through auditory or magnified verification; and
  - (E) demonstrate “modifier key” combination keyboard commands to perform necessary tasks.
- (2) The student demonstrates the ability to navigate the computer screen using screenreading software and mobile technology through keyboard or gesture commands. The student is expected to:
- (A) demonstrate screenreader navigation commands;
  - (B) demonstrate the ability to adjust and personalize settings through auditory feedback; and
  - (C) select appropriate hardware such as laptop computer, mobile device, or braille display to work with specific screenreader.
- (3) The student demonstrates the ability to navigate the computer screen using screen magnification software. The student is expected to:
- (A) demonstrate screen magnification navigation commands;
  - (B) demonstrate the ability to adjust and personalize settings through screen magnification; and
  - (C) select preferred screen magnification software.
- (4) The student demonstrates the ability to navigate the computer screen based on a specific operating system using screenreading and/or magnification software. The student is expected to:
- (A) identify the operating system on various devices;
  - (B) explain the operating system layout;
  - (C) explore the operating system through keystrokes, gestures or pointing device using screenreading or magnification software; and
  - (D) use context menu.
- (5) The student demonstrates effective file management strategies using screenreading or screen magnification software. The student is expected to:
- (A) create, delete, rename, copy, cut, paste, and move files;
  - (B) create and navigate a hierarchy of sub-directories and implement organizational strategies;
  - (C) identify and use multiple file types; and
  - (D) identify and use portable media and cloud storage.
- (6) The student demonstrates knowledge of word processing skills using screenreading and/or screen magnification software. The student is expected to:
- (A) format a document to Modern Language Association (MLA) standards;
  - (B) spell check documents using access software;
  - (C) implement appropriate use of styles, headers, footers, and bullets;
  - (D) demonstrate the ability to manipulate text by cutting, copying, pasting, and using search and replace;
  - (E) save documents in various file types; and
  - (F) print documents.
- (7) The student demonstrates the ability to navigate the Internet using screenreading or screen magnification software. The student is expected to:
- (A) navigate a web-page by identifying controls and the keystrokes or gestures associated;
  - (B) demonstrate the understanding of web address nomenclature and extensions;
  - (C) plan, use, and evaluate search results; and

- (D) evaluate a web-site for purpose, accuracy, security, and validity.
- (8) The student effectively uses email for communication purposes using screenreading and/or screen magnification software. The student is expected to:
- (A) use web-based or email client for email communication;
  - (B) demonstrate an understanding of email address nomenclature and extensions;
  - (C) demonstrate the ability to compose, open, read, reply, forward, delete, cc, bcc, and manage email messages;
  - (D) demonstrate the ability to attach and detach files in an email; and
  - (E) identify junk, spam, and unsafe email and demonstrate how to unsubscribe from such email.
- (9) The student demonstrates knowledge of presentation software using screenreading and/or screen magnification software. The student is expected to:
- (A) identify and navigate the major areas of the presentation software interface on computer or note-taker;
  - (B) identify and choose desired slide templates, themes, transitions, and animations;
  - (C) insert various types of media into slide placeholders; and
  - (D) plan, practice, and present a slide production using presentation software.
- (10) The student demonstrates knowledge and implementation of spreadsheets using screenreading or screen magnification software. The student is expected to:
- (A) identify spreadsheet layout and design including rows, columns, and cells;
  - (B) identify and navigate the major areas of the workbook or worksheet interface;
  - (C) identify types of spreadsheets and their purposes;
  - (D) enter various types of data, numbers or text;
  - (E) generate graphical representations based on data being entered;
  - (F) choose and enter formulas; and
  - (G) format cells.
- (11) The student demonstrates knowledge and skills to support alternative access. The student is expected to:
- (A) use specialized hardware such as alternate keyboards, specially designed mouse, switch, and joy stick;
  - (B) use specialized software such as onscreen keyboard with scanning and word prediction; and
  - (C) use study aids such as highlighting and masking, and creating electronic outlines.
- (12) The student demonstrates usage of specialized hardware and software. The student is expected to use the following based on individual needs:
- (A) navigate Digital Accessible Information System (DAISY) formatted instructional materials;
  - (B) navigate digital materials using a refreshable braille display;
  - (C) emboss files using braille translation software and a braille embosser;
  - (D) use standalone or software-based scanning and reading systems; and
  - (E) use portable or desktop video magnifiers to view printed materials, including pictures, graphics, graphs, charts, and tables.

*Description of specific student needs this course is designed to meet:*

Specific students needs across multiple platforms:

- QWERTY keyboard skills or alternate keyboards and other access materials
- Folder and file management
- Word processing skills
  - Editing text
  - Using spell check
  - Formatting documents
- Internet browsing
  - Reading
  - Searching
  - Bookmarking
  - Reading and writing Internet based email
  - Completing forms
  - Using best practice for access to pictures and videos
- Presentation skills as deemed appropriate for students
- Spreadsheet data presented in multiple ways

*Major resources and materials:*

- Assistive Technology (screenreading software, screen magnification software, braille displays, scanning and reading software, DAISY readers, text readers, alternate access and quality enhancements such as spell check and word prediction).
- Mainstream and adapted curriculum for assistive technology, proprietary curriculum developed internally.
  - Training Ware for Assistive Technology Trainers (Digital Apex)
  - Course Technology (Cengage Learning)

*Suggested course activities:*

Lessons

- Desktop navigation – dependent on device and type of access
- File-folder management
- Create, edit, format word processing document
- Presentation
- Spreadsheet
- Internet searching, form filling/completion

Optional Activities

- Writing a response to a given prompt
- Words Matter writing contest
- Presentation of a proposal on visiting a foreign land using all of the elements listed in the required lessons



*Suggested methods for evaluating student outcomes:*

Performance Indicator Evaluations (examples):

- Access skills
- Computer software
- Internet Explorer with Job Access With Speech (JAWS)
- iPad Voiceover

*Teacher qualifications:*

Teachers holding a Technology Applications or Computer Science Certification. Technology Applications: Grades 8-12; Technology Applications: Grades 7-12; Technology Applications: Early Childhood-Grade 12; Computer Science: Grades 8-12.

Recommended: Teacher of Students with Visual Impairments Supplemental: Early Childhood-Grade 12.

*Additional information:*