

ASSISTIVE TECHNOLOGY CERTIFICATE PROGRAM

COURSE DESCRIPTIONS

Required Courses

DHD 440 - Introduction to Assistive Technology: Principles and Practice (3 credit hours, online)

An examination of best clinical practices and state-of-the-art assistive technology devices, including augmentative communication, cognitive technologies, computer access, environmental modification, job accommodation, seating and wheeled mobility. Funding and outcomes measurement are also covered.

ATCP Field Experience

Choose either DHD 590 (online) or DHD 441 (lab-based at UIC). See descriptions below.

Online Electives

DHD 544 - Assistive Technology in Early Childhood Settings (2 credit hours)

An introduction to the legal foundations of AT in early childhood settings, family-centered approaches to assessment, and an exploration of tools to support participation in home- and play-based activities for children 0-5 years of age. Students also develop a toolkit to support play-based AT assessment. Prerequisite: DHD 440 or consent of instructor

DHD 548 – Assistive Technology Tools for Education (3 credit hours)

Using categories from two school-based AT consideration guides (GPAT and WATI), explore a range of assistive technology features and products that support active participation and learning in educational settings for students with both high and low incidence disabilities from the early grades through transition. AT training strategies are also covered.

DHD 553 - Assistive Technology for Individuals Who Are Blind or Visually Impaired (1 credit hour)

An introductory overview of assistive technology for people who are blind or visually impaired. Topics include screen magnification software, screen reading software, OCR software, braille technologies, low vision devices, smart phone and tablet accessibility features, and other specialized technologies designed for people with visual impairments.

DHD 554 - Augmentative Communication Assessment (3 credit hours)

A course covering a range of augmentative communication assessment strategies and evaluation materials utilizing case examples for discussion of specific approaches for different ages, disabilities, and settings. Students work directly with a wide range of speech-generating devices to conduct feature analyses of systems and to gain hands-on experience using a variety of access methods, rate enhancement techniques and vocabulary expansion tools.

DHD 555 - AT Consideration, Assessment and Documentation in PreK-12 Educational Settings (3 credit hours)

An in-depth introduction to the delivery of AT devices and services in the preK-12 educational setting. Students use a case study project to apply the steps of consideration, assessment and documentation. Topics include data design, assessment protocols, and the legal mandates of IDEA. A basic understanding of AT devices is a prerequisite as the emphasis in this course is the service delivery process. Prerequisite: DHD 440 or strong familiarity with AT tools used in educational settings. DHD 548 recommended.

DHD 556 - Seating and Positioning for Wheelchair Mobility (1 credit hour, first 5 weeks of semester)

A focus on seating and positioning assessment for functional use of a manual or powered wheelchair for children and adults with physical disabilities. Emphasis is placed on identifying the appropriate technology to match consumer needs. Course content includes an in-depth look at assessment procedures and seating and positioning technology selection and applicable research. Prerequisite: DHD 440 or consent of instructor

DHD 557 - Manual Wheelchair Technology (1 credit hour, second 5 weeks of semester)

An in-depth look at the styles and components of manual wheelchairs designed for children and adults with physical disabilities. Emphasis is placed on identifying the appropriate technology to match consumer needs. Content includes information on frame materials and features to guide the manual wheelchair selection process, performance adjustments, transportation standards and applicable research. Prerequisite: DHD 556

DHD 558 - Powered Wheelchair Technology (1 credit hour, last 5 weeks of semester)

An in-depth look at the styles and features of powered wheelchairs designed for children and adults with physical disabilities. Emphasis is placed on identifying the appropriate technology to match consumer needs. Content includes information on assessment, access methods, powered seat functions, electronics, programming and applicable research. Prerequisite: DHD 556 & 557

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DHD 559 - Ergonomics & Safety for Workers with Disabilities (1 credit hour)

Individuals with disabilities can often achieve employment through the application of sound ergonomic principles, and where necessary, low-to-high-tech job accommodation devices. This course covers the application of these strategies in office and manufacturing environments, as well as the unique issues that individuals with disabilities face regarding emergency evacuation from worksites.

DHD 562 - Mobile Technology and Computers: Built-in Accessibility Features (1 credit hour)

This course explores the built-in accessibility features that are available in Windows PC, Macintosh, Chromebook, iOS and Android operating systems.

DHD 566 - Intro to Microcontrollers in Assistive Technology (2 credit hours)

In the spirit of DIY projects, this class introduces students to the use of entry-level electronics utilizing microcontrollers such as the Arduino board. Students are guided in constructing projects with an assistive technology focus. Project options include making an adaptive switch to operate a computer game, creating an alternate input control for accessing the computer and/or building a basic EADL/ECU control. No previous experience with microcontrollers is required, only a proficiency with computer use.

DHD 567 - AAC for Individuals with Autism Spectrum Disorder (2 credit hours)

Content addresses how AAC can meet the unique communication needs of individuals with autism spectrum disorders with emphasis on evidence-based modalities and intervention strategies. Topics include supports for social interaction and participation, assessment, and a range of intervention approaches including PECS, visual supports, aided language stimulation, and LAMP.

DHD 568 - Supporting AAC in Educational Settings (3 credit hours)

This course focuses on instruction and intervention for students who use augmentative and alternative communication systems (AAC) in the K-12 setting. Content emphasizes strategies that are classroom-based and can be used in inclusive settings to aid students' language and educational growth. Topics include assessment, literacy, social relationships, collaboration, and academic adaptations.

DHD 569 – Environmental Modification (1 credit hour)

A comprehensive overview of accessibility issues common in private residences and public spaces. National, state, and local codes are used as a framework for addressing the barriers. Accessible design and assistive technology solutions are also investigated.

DHD 590 – Field Experience in Disability & Human Development (1 credit hour)

Students demonstrate their knowledge and skill set regarding the provision of quality assistive technology services. Students either perform direct services at their place of employment or report on observations of direct services by service providers in their geographic area. *(Meets ATCP field experience requirement.)*

DHD 594 Special Topics Course - Technology to Support Universal Design for Learning (1 credit hour)

An introduction to the framework of Universal Design for Learning (UDL). Technology will be explored through the lens of the three components of UDL: multiple means of representation, multiple means of expression and multiple means of engagement. Participants will explore technologies to support all learners for grades K-12.

DHD 594 Special Topics Course - 3D Printing in Assistive Technology (1 credit hour)

3D printing is an emerging tool within Assistive Technology (AT). This course will cover the basics of 3D printing in AT for customizing and fabricating low-cost adaptive devices without needing to own a 3D printer.

DHD 594 Special Topics Course - Assistive Technology and Transportation (2 credit hours)

This course explores assistive technology in the transportation setting, including private vehicles, public transit, planes, cruise ships, and ride share.

Blended/Lab-Based Courses Taught at UIC

DHD 441 - Adaptive Equipment Design and Fabrication (3 credit hours)

A course covering design theories, idea generation, fabrication machines, hand tool techniques, and appropriate materials that relate to custom design and custom fabrication of low-tech adaptive equipment. Students work in the ATU shop during practice sessions and complete an individual assessment and implementation project based on actual consumer request. *(Meets ATCP field experience requirement.)*

DHD 551 - Computers, Communication and Controls in Rehabilitation Technology (3 credit hours)

A course exploring different methods for evaluating access methods and controls used to operate computers, communication devices and powered wheelchairs. Instruction also addresses device features and integration factors. Includes hands-on labs.

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Questions?

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