

Southern University
Department of Rehabilitation and Disability Services (DRDS)
Undergraduate Course Syllabus
Fall 2011

I. Descriptive Information:

A. Course Number: REHB 475

B. Course Title: APPLICATIONS OF ASSISTIVE TECHNOLOGY IN VOCATIONAL REHABILITATION

C. Catalog Description:

This course reviews the applications of assistive technology as applied to the needs of an individual with a disability. It covers various types of assistive technology (AT) including: computer access, augmentative communication, and electronic devices for activities of daily living (ADL), wheelchairs and seating, and vehicle modifications. The course includes the application of clinically-based strategies for determining an individual's need for and acceptance of assistive technology to improve functional outcomes.

D. Instructor's Emphasis:

The student will be introduced to legislation, categories/terminology, services, and devices related to Assistive Technology. Perceived quality of life will be greatly emphasized. The course will be primarily web-based with designated activities and assignments to complement each topic.

E. Course Credit: 3 Hours **Class Time:** 4:30 p.m. Tues & Thursday

F. Prerequisites: Introduction to Rehabilitation; Medical Aspects; and Voc Evaluation. Computer access and competency required.

G. Intended Audience:

This course is intended for senior-level Rehabilitation majors.

H. Instructor

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II. Instructional Objectives for REHAB 475

Upon completion of the course, students will be able to:

1. Describe a conceptual framework for the application of assistive technology to meet the needs of individuals with disabilities, using the Human Activity Assistive Technology (HAAT) Model and the Matching Person and Technology (MPT)
2. Match device characteristics and technology resources to consumer needs, skills and activities.
3. Define assistive technology.
4. Delineate the characteristics of assistive technologies.
5. Identify legislation impacting assistive technology.
6. Describe the assessment strategies for specific assistive technology devices which are used by AT clinicians, such as occupational therapists, physical therapists, speech pathologists and biomedical engineers.
7. Define the rehabilitation counselor's role in serving on the AT assessment team and demonstrate the ability to apply an assistive technology clinical protocol to evaluate an individual's need for and acceptance of specific types of assistive technology.
8. Identify the benefits of technology for the individual with a disability.
9. Identify ways of expanding opportunities for participation within settings that can accommodate wide ranges of differences in abilities and interests.
10. Demonstrate the ability to use the world-wide web and other resources to locate information on current assistive technology products and services for specific disabilities, such as cerebral palsy, spinal cord injury, sensory impairment, and traumatic brain injury.

III. Text: Olson, D. A., & DeRuyter, T. (2002). *Clinician's Guide to Assistive Technology* (1st ed.) St. Louis, MI: Mosby.

Articles and websites will be used extensively to supplement text.

Recommended Reading:

- Galvin, J., & Scherer, M. (Eds.). (1996). *Evaluating, selecting, and using appropriate assistive technology*. Gaithersburg, MD: Aspen Pub.
- Scherer, M. J. (2000). *Living in the State of Stuck, 3rd. Ed: How Assistive Technology Impacts the Lives of People with Disabilities*. Cambridge, MA: Brookline Books.
- Flippo, K. J., Inge, K. J., & Barcus, J. M. (Eds.). (1995). *Assistive Technology: A Resource for School, Work and Community*. Baltimore: P. H. Brooks Pub. Co.
- Riemer-Reiss, M. L., & Wacker, R. (2000). Factors associated with assistive technology discontinuance among individuals with disabilities. *Journal of Rehabilitation*, 66(3), 44-50.
- Driscoll, M., Rodger, S., & De Jong, D. (2001). Factors that prevent or assist the integration of assistive technology into the workplace for people with disabilities with spinal cord injuries: Perspectives of the users and their employers and co-workers. *Journal of Vocational Rehabilitation*, 16(1), 53-66.
- Gelderblom, G., de Witte, L. Scherer, M., & Craddock, G. (2002). Matching person & technology (MPT) assessment process. *Technology & Disability*, 14(3), 125-131.
- Schneider, M. (1999). Achieving greater independence through assistive technology, job accommodation and supported employment. *Journal of Vocational Rehabilitation*, 12(3), 159-164.

Course Resources (Electronic Media)

The instructor will assist students in finding resource information on AT. Some examples are the following:

New Freedom Initiative:

<http://www.whitehouse.gov/news/usbudget/blueprint/bud08.html> This web site presents the Bush Administration's Goals for services and programs for individuals with disabilities, to include support for assistive technology.

Tech Connections Project: <http://www.techconnections.org> This web-based project serves as a general resources AT for state VR agencies.

Accommodation Ideas by Disability:
<http://www.jan.wvu.edu/media/ideas.html> This web site by the Job Accommodation Network presents job accommodation strategies by disability. Recommendations typically cite specific examples of assistive technology.

National Web Resource for Home Modifications (<http://homemods.org>) This site provides multiple links to national resource for modification of one's home to accommodate physical or sensory disabilities.

Computer Access: <http://www.rehabcentral.com/art-adee.cfm?artID=9037>
This site provides an overview of adaptations to computer technology to accommodate physical or sensory impairments.

Digital Divide for all Persons:
<http://www.zdnet.com/zdnn/stories/news/0,4586,2704647,00.html> This web article discusses the digital divide for access and use of computers by people with disabilities.

Wheelchair University (<http://www.wheelchairnet.org>) This comprehensive website contains multiple resources lists and tutorial information on proper evaluation for and use of wheelchairs by individuals with disabilities.

Course Requirements

1. Students will read web-lecture material and other print documents on assistive technology services and devices.
2. Students will participate in web-based, online, class discussions, hosted by the Instructor, which will synthesize the material studied for each instructional unit and present clinical problems/issues in the provision of AT services and devices.
3. Students will interact with various AT clinical experts and discuss current approaches to matching appropriate technology for individuals with disabilities.
4. Students will interview consumers and identify the person's need for and comfort for using various types of technologies, including training on the AT.

Class participation is a critical component of this class. Class grade points will be assigned for participation in the online discussion sessions.

Short course examinations will be scheduled during the course.

Course Schedule: List of Instructional Topics:

Week 1 Activities

Topics:

- Introduction to Assistive Technology (AT)
- Historical/legislative history of AT
- Definition of terms in AT practice
- Conceptual Framework for AT (HAAT model)
- Current U.S. public policy on the applications of AT

Assignments:

- Classroom meeting,
- Instructor Presentation,
- Discussion Session

Course Schedule (cont)

Week 2 Activities

Topics:

- Role of rehabilitation professionals in AT Interventions
- The counselor's role in assistive technology services
- Strategies for clinical assessment of AT needs
- Use of the 2-hour MPT clinical assessment protocol for AT
- Measuring rehabilitation outcomes from AT services and devices
- Addressing the issue of assistive technology device abandonment

Assignments:

- Complete and submit the MPT instrument for one consumer who use AT
- Scheduled Online, Presentation, Discussion Session

Week 3 Activities

Topics:

- Jobsite modifications for individuals with disabilities (applied ergonomics).
- Review of basic ergonomics as applied to work settings.
- Review of the *Americans with Disabilities Act Accessibility Guidelines* and application to worksite modifications.
- Web resources for job accommodations
- Case studies on job accommodations

Assignments:

- Course Quiz 1, review of course materials, including HAAT model and counselor's role in AT service delivery (in-class proctored).

Week 4 Activities

Topics:

- Home modifications (including the application of environmental controls)
- Federal accessibility guidelines applicable to living environments
- National resources for accessible living environments

Assignments:

- Scheduled Class meeting, Presentation, Discussion Session

Week 5 Activities

Topics:

- Computer access (adaptive computer systems for individuals with disabilities)
- Review of basic computer systems and terminology
- Identification of special interface controls and displays to accommodate
- Disabilities Discussion of the A Digital Divide® as applied to people with disabilities

Assignments:

- Course Quiz 2, including response to case scenarios to determine AT needs for jobsite, home modifications and computer access (online, timed).
- Complete and submit the MPT instrument for a consumer who needs computer access
- Case studies, Group projects, Discussion

Week 6 Activities

Topics:

- Augmentative/Alternative Communication
- Importance of functional communication to appropriate rehabilitation outcomes and personal independence and autonomy
- Review of the clinical approach to evaluating an individual's need for and benefit from an augmentative communication system
- Exploration of web resources for information on communication devices

Assignments:

- Scheduled Online, Site visits, Discussion Session
- Submit a report describing a visit to a rehabilitation center (or vendor) which specializes in assistive technology. Report should list the activities observed and outline the information gained from interviewing clinical staff on assessment protocols.

Week 7 Activities

Topics:

- Driver rehabilitation (evaluation, prescription and training on adaptive driving systems)
- Traffic safety principles as applied to adaptive driving systems
- Clinical approach to assessment for adaptive driving systems
- Review of the state-of-the-art in adaptive driving systems and vehicle modifications
- Licensure for Driver Rehabilitation Specialists

Assignments:

Class presentations, Discussion Panel

Course Schedule (cont)

Week 8 Activities

Topics:

- Wheelchairs and seating systems
- Review of terminology for wheelchair and seating systems
- Recognition of consumer issues for wheelchair/seating systems
- Biomedical principles used in prescribing seating systems
- Web resources for information on wheelchairs and seating systems

Assignments:

- Course Quiz 3, comprehensive over all course materials, based on a specific case study, development a comprehensive strategy for defining and training with respect to a person's AT needs (proctored).
- Quiz on AT Topic Papers (proctored)
- Scheduled Class meeting, Discussion Session

Evaluation of Students

Course Quizzes = 25 Points, (5 quizzes)

Class Participation = 25 Points (Online, synchronous DS = 2 pts, Week-long DS = 5 pts)

Quiz on AT Topic Papers = 25 Points

AT Center / Vendor Tour = 10 Points (including 1-page report on observations)

AT Interviews with Consumers, using the MPT instrument = 10 Points (N=2)

Grading

The grading scale is:

90 - 100 points = A

80 - 89 points = B

70 - 79 points = C

60 - 69 points = D

Below 59 = F

