OTA225
ASSISTIVE TECHNOLOGY AND ADAPTATION
2 Credit Hours

Prepared by:
Lisa Martin MS, OTR/L
Occupational Therapy Assistant Program Director

Created on Date: 6-1-11

Elizabeth Check, Dean, Career and Technical Education
Mary Beth Ottinger, Division Chair
OTA225 Assistive Technology and Adaptation

I. CATALOGUE DESCRIPTION

A. Prerequisite: SPD105, PSYXXX Abnormal Psychology, OTA130 Psychosocial Occupational Therapy, OTA145 Applied Neurology, OTA131 Psychosocial Performance Skills, OTA140 Professional Practice and Management II, OTA150 Level I Fieldwork A, all require a grade of “C” or better.
Co-requisite: OTA160 Level I Fieldwork B.

B. Credit hour award – 2

C. Description - Assistive Technology and Adaptation includes fundamentals of designing and fabricating adaptive equipment, elements of wheel chair seating and positioning, switches, ergonomic interventions, environmental controls, adapted exercise / leisure equipment, voice controls, vendor resources, community resources, adapted driving, low vision aids, accessibility solutions in the home and community, low tech and high tech options to enhance ADL and IADL performance. (S)

II. EXPECTED LEARNING OUTCOMES/CORRESPONDING ASSESSMENT MEASURES
(With numbers in parentheses referring to ACOTE standards)

<table>
<thead>
<tr>
<th>Expected Learning Outcomes</th>
<th>Assessment Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synthesize current research related to the efficacy of assistive technologies used for a</td>
<td>Class Discussion/Activity Formative Assessment Written</td>
</tr>
<tr>
<td>specific population. (B.1.10, B.8.1, B.8.2)</td>
<td>Project/Paper Summative Examination</td>
</tr>
<tr>
<td>Demonstrate the ability to research software and hardware appropriate for a variety of</td>
<td>Class Discussion/Activity Formative Assessment Written</td>
</tr>
<tr>
<td>special needs including consumer points of access and funding sources. (B.1.2, B.1.3, B.</td>
<td>Project/Paper Summative Examination</td>
</tr>
<tr>
<td>5.2, B.8.2).</td>
<td></td>
</tr>
<tr>
<td>Demonstrate the appropriate use of software, peripherals, and environmental control unit</td>
<td>Class Discussion/Activity Formative Assessment Written</td>
</tr>
<tr>
<td>when life tasks cannot be performed. (B.2.10, B.5.15, B.5.2)</td>
<td>Project/Paper Summative Examination</td>
</tr>
<tr>
<td>Demonstrate use of augmentative communication devices. (B.5.15, B.5.16, B.5.19)</td>
<td>Class Discussion/Activity Formative Assessment Written</td>
</tr>
<tr>
<td></td>
<td>Project/Paper Summative Examination</td>
</tr>
<tr>
<td>Demonstrate oral, written and computer communication skills in the critical analysis and</td>
<td>Class Discussion/Activity Formative Assessment Written</td>
</tr>
<tr>
<td>problem solving process relative to assistive technology interventions. (B.1.1, B.1.2,</td>
<td>Project/Paper Summative Examination</td>
</tr>
<tr>
<td>B.1.3, B.5.17, B.5.16)</td>
<td></td>
</tr>
<tr>
<td>Assess and analyze the activity demands, performance skills, activity demands, performance</td>
<td>Class Discussion/Activity Formative Assessment Written</td>
</tr>
<tr>
<td>patterns, and client factors across contexts for technology use, including transitions</td>
<td>Project/Paper Summative Examination</td>
</tr>
<tr>
<td>between contexts. (B.2.7, B.2.11, B.4.1-B.4.3)</td>
<td></td>
</tr>
<tr>
<td>Identify technology and environmental needs as part of a comprehensive OT evaluation that</td>
<td>Class Discussion/Activity Formative Assessment Written</td>
</tr>
<tr>
<td>includes occupational profile and an analysis of occupational performance. (B.2.10, B.2.11,</td>
<td>Project/Paper Summative Examination</td>
</tr>
<tr>
<td>)</td>
<td></td>
</tr>
<tr>
<td>Assess the client’s occupational and participation needs related to: instrumental activities</td>
<td>Class Discussion/Activity Formative Assessment Written</td>
</tr>
<tr>
<td>of daily living, education, work, play, leisure, social participation and the need for</td>
<td>Project/Paper Summative Examination</td>
</tr>
<tr>
<td>technology applications to support these needs. (B.2.11, B.4.1-B.4.3)</td>
<td></td>
</tr>
<tr>
<td>Task</td>
<td>Class Discussion/Activity</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>----------------------------</td>
</tr>
<tr>
<td>Demonstrate the ability to analyze consumer positions, as well as the appropriate assistive technology to facilitate function. (B.2.9, B.5.9)</td>
<td>Class Discussion/Activity</td>
</tr>
<tr>
<td>Employ the OT process and PEOP model to design a low tech and high tech piece of adaptive equipment to meet a specific client need. (B.2.11, B.3.1, B.5.2, B.5.5, B.5.6, B.5.10)</td>
<td>Class Discussion/Activity</td>
</tr>
<tr>
<td>Integrate current models of practice that underlie the practice of OT in Assistive Technology interventions. (B.7.1, B.3.1, B.3.2)</td>
<td>Class Discussion/Activity</td>
</tr>
<tr>
<td>Describe the impact of culture, gender, race and age on selection of adaptive technologies and intervention techniques. (B.1.7, B.1.8, B.1.9, B.6.1, B.6.2)</td>
<td>Class Discussion/Activity</td>
</tr>
<tr>
<td>Design, alter, and/or adapt tasks to meet the occupational and activity demands of the context. (B.2.11, B.5.10, B.5.18)</td>
<td>Class Discussion/Activity</td>
</tr>
<tr>
<td>Adapt the environment, tools, materials and occupations to the needs of clients and their sociocultural context. (B.5.8)</td>
<td>Class Discussion/Activity</td>
</tr>
<tr>
<td>Demonstrate the ability to use the teaching-learning process with peers, consumers, health professionals and the public.(B.2.10, B.5.16)</td>
<td>Class Discussion/Activity</td>
</tr>
<tr>
<td>Justify and document the provision of OT and basic technology and environmental services. (B.4.6, B.5.16)</td>
<td>Class Discussion/Activity</td>
</tr>
<tr>
<td>Demonstrate the ability to promote OT in the context of community accessibility, by educating clients, other professionals, third-party payers and the public. (B.2.3, B.5.15, B.5.16, B.5.17, B.9.3)</td>
<td>Class Discussion/Activity</td>
</tr>
<tr>
<td>Recognize when to refer clients to appropriate professionals for technology and environmental resources when client needs are beyond the scope of practice of the OT practitioner. (B.4.5, B.5.7, B.5.22)</td>
<td>Class Discussion/Activity</td>
</tr>
<tr>
<td>Demonstrate understand and apply technology and environmental-related legislation and policies across the delivery process (e.g., ADA, IDEA, Technology Act). (B.7.3)</td>
<td>Class Discussion/Activity</td>
</tr>
<tr>
<td>Describe and summarize the role of OT practitioners in providing a global, occupation-based perspective encompassing technology and environmental use and delivery. (B.1.9, B.3.3, B.7.1-B.7.3)</td>
<td>Class Discussion/Activity</td>
</tr>
<tr>
<td>Develop a client/community based advocacy plan relative to current technology and environmental issues. (B.2.6, B.6.1, B.9.3, B.9.12)</td>
<td>Class Discussion/Activity</td>
</tr>
<tr>
<td>Devise an OT basic technology and environmental program evaluation to improve the effectiveness and efficiency of service delivery. (B.5.25, B.7.8, B.8.1, B.8.3, B.9.4)</td>
<td>Class Discussion/Activity</td>
</tr>
</tbody>
</table>
III. OUTLINE OF TOPICS

A. Introduction and Framework
   1. A Framework for Assistive Technologies
   2. The Disabled Human User of Assistive Technologies

B. Service Delivery in Assistive Technologies
   1. Delivering Assistive Technology Services to the Customer
   2. Funding and Public Policy

C. Assistive Technology Principles
   1. Matching Consumers Across the Life Span with the Most Appropriate Assistive Technologies
   2. Contexts: Assistive Technology at Home, School, and Work, and in the Community
   3. Human Factors and Environmental Access
   4. Role of the OTA/Documentation
   5. Outcomes

D. The Contexts for Assistive Technology Applications
   1. Assistive Technologies in the Context of the Classroom
   2. Assistive Technologies in the Context of Work
   3. Home Environments, Automation, and Environmental Control
   4. Adaptive Aids for Self-care and Child-care
   5. Recreation/Play Environments

E. The Activities: General Purpose Assistive Technologies
   1. Seating Systems as Extrinsic Enablers for Assistive Technologies - Seating Intervention and Postural Control
   2. The Human-Assistive Technology Interface
   3. Sensory Aids for Persons with Visual Impairment
   4. Sensory Aids for Persons with Auditory Impairment

F. Technologies for Information and Communication
   1. Computer Access
   2. Information Technologies
   3. Integrated Systems

G. The Activities: Performance Areas
   1. Assistive Technology for Cognitive Augmentation
   2. Augmentative and Alternative Communication Systems
   3. Technologies that Enable Mobility
      a. Technologies for Ambulation and Locomotion
         i. Lower Limb Orthotics and Prosthetics
         ii. Wheelchair Mobility
      b. Spatial Orientation and Way Finding
      c. Driver Evaluation and Vehicle Modification
      d. Technologies that Enable Transportation
   4. Upper Limb Orthotics
5. Adaptive Aids
6. Upper Limb Prosthetics

IV. METHOD(S) OF INSTRUCTION

A. Lecture
B. Readings from textbook
C. Supplemental handouts
D. Classroom activities
E. Participation in active learning by computer programs, games, and internet-based activities.
F. Peer interactive activities, group projects, and discussions in classroom and online

V. REQUIRED TEXTBOOKS


VI. REQUIRED MATERIALS

A. Course homepage available through Blackboard/WebCT or Luminis Platform
B. A computer with internet access (available through the Jefferson College Labs)
C. Paper, notebooks, pens, pencils with erasers

VII. SUPPLEMENTAL REFERENCES

A. Class Handouts

B. Current Library Resources
   2. Periodicals
   3. Videos

C. Current internet resources
   1. On-line reference materials
   2. Textbook companion web-site
   3. American Occupational Therapy Association (AOTA) web-site
VIII. METHOD OF EVALUATION (basis for determining course grade)

A. Written Projects or Papers will equal 20% of total course grade. Consisting of 1-5 assignments focused on application of occupational therapy theory and principles.

B. Summative Written Examinations – 3-5 examinations worth up to 60%.

C. Attendance/Participation grade will equal 10% of total course grade.

D. Additional Credit – Additional activities, community service, or exemplary professional behaviors as assessed by a professional behaviors checklist will equal 10% of total course grade.

E. Grading Scale:
   A = 93-100%
   B = 84-92.9%
   C = 76-83.9%
   D = 66-75.9%
   F = 0-65.9%

IX. ADA STATEMENT

Any student requiring special accommodations should inform the instructor and the Coordinator of Disability Support Services (Library; phone 636-797-3000, ext. 169).

X. ACADEMIC HONESTY STATEMENT

All students are responsible for complying with campus policies as stated in the Student Handbook. Any student who cheats or plagiarizes will be subject to dismissal from the Occupational Therapy Assistant Program and will be referred to the college for disciplinary action. (See College website, http://www.jeffco.edu/jeffco/index.php?option=com_weblinks&catid=26&Itemid=84)