Occupational therapy and mechanical engineering: an interdisciplinary assistive technology course

Elizabeth A. DeRemer

The University of Toledo

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Occupational Therapy and Mechanical Engineering: An Interdisciplinary Assistive Technology Course

Elizabeth A. DeRemer

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Department of Rehabilitation Sciences

Occupational Therapy Doctorate Program

The University of Toledo

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Note: This document describes a Capstone Dissemination project reflecting an individually planned experience conducted under faculty and site mentorship. The goal of the Capstone Experience is to provide the occupational therapy doctoral student with a unique experience whereby he/she can demonstrate leadership and autonomous decision-making in preparation for enhanced future practice as an occupational therapist. As such, the Capstone Dissemination is not formal research.
Introduction

A new interdisciplinary elective course has been designed for the Occupational Therapy Doctorate (OTD) program at The University of Toledo (UT). An informal needs assessment was conducted to survey current OTD students and faculty about the need and interest for this type of course (see Appendices A and B for faculty and study surveys, respectively). This course will be offered to OTD students in the spring semester of the second year of study after the completion of OCCT 806, Occupational Therapy Models of Practice VI. OTD students will collaborate with undergraduate mechanical engineering students in the Mechanical, Industrial, and Manufacturing Engineering (MIME) program at UT. MIME students will then be enrolled in MIME 4200, which is the engineering capstone course completed in the final semester prior to graduation.

Together, OTD and MIME students will collaborate to design an assistive device to meet the unique needs of a client from the Ability Center of Greater Toledo. In addition to serving as consultants to the mechanical engineering students throughout the design process, OTD students will be responsible for in-depth client evaluation and re-assessment. Each student team will be advised by two faculty members, one from the OTD program, and the other from the MIME program.

Content of this course focuses on two main areas – assistive technology and interprofessional education (IPE). Topics included under the assistive technology content area include the historical roles of each profession in this practice area, pertinent United States legislation, relevant terminology representative of each profession, and professional and ethical practice. Content on IPE will include justifying the need for interprofessional learning experiences, explaining the academic and professional benefits
of IPE, team development, and conflict resolution. These two main content areas together will help students acquire a deeper understanding about each other’s professions, establish a stronger professional identity, and learn to work effectively on interprofessional teams.
Philosophy of the OTD Doctorate Program at UT

The OTD educational program at UT emphasizes the initial purposes of the field of occupational therapy as proposed by the National Society for the Promotion of Occupational Therapy (NSPOT, 1917) in the educational process of their students. These purposes are to advance the use occupation as a therapeutic measure, to study the effects of occupation on humans, and to distribute the knowledge gained.

Occupations are defined as things that an individual engages in that give him or her meaning and purpose in life. These occupations can be used in therapeutic ways to promote one’s health and well-being, with benefits possible across the lifespan. Occupations can be utilized as an end goal of therapy (i.e. therapy with the goal of gaining or re-gaining the abilities needed to return to a desired occupation) or as a therapeutic means (i.e. using occupation in the intervention process). This could involve the growth of new skills, or adaptation. This might also mean finding ways around a problem, or compensation. The uniqueness of this health profession is the tenant that the client should help him or herself through the active use of occupation.

The occupational therapist acts to facilitate therapeutic occupation. The therapist upholds the fundamental belief that each human has an inherit dignity. Striving to help individuals achieve function and engagement in life through the use of occupation does this. To holistically understand human function, the therapist draws from a wide base of interdisciplinary knowledge as well as knowledge specific to the field of occupational therapy, including biology, psychology, sociology, and anthropology.

The OTD program at UT has a strong commitment to the students, the public, and service recipients to promote of the therapeutic use of occupation. In order to effectively
do so, the faculty has chosen to drawn upon the Conceptual Framework of Therapeutic Occupation, or CFTO (Nelson, 1997). Students first learn the terminology and concepts in this framework as a foundation for understanding occupation, occupational therapy, and clinical analysis. Mastering this framework provides a common language that is beneficial to students in forming a professional identity and understanding and applying other frameworks and models relevant to the profession.

As a doctoral program of study of occupational therapy, there are central goals for students to be able to effectively advance the profession in practice, advocacy, and research. Through abstract reasoning and self-direction, students acquire confidence in autonomous decision making. Together, the terms for these four goals form the acronym “PARADM.” Focus on these goals prepares students to become professionals who are competent, ethical, and committed in practice with strong leadership abilities. Clinical experiences each semester equip students with the practical clinical skills necessary for entry-level practice. Student-faculty mentoring relationships complement these core values and contribute to professional development of students, as do learning activities requiring students to work with and learn from one another.
References


Philosophy of the MIME Undergraduate Program at UT

The MIME undergraduate program at UT offers specific program goals, educational objectives, and student outcomes to guide curriculum development. Program goals focus on the development of students’ problem solving abilities in various engineering problems via laboratory and co-operative learning experiences. Laboratory experiences allow students to gather and interpret data on various types of mechanical and electrical systems. There are also group project opportunities that foster skills necessary for oral and written presentations, teamwork, and communication. Co-operative educational requirements allow students to gain real-world experience in the practice of engineering while giving a context to academic studies. Graduates of this program will be prepared for practice as a professional engineer in a variety of industries and government agencies or for continued education in graduate or professional programs such as medicine or law (University of Toledo [UT] Mechanical, Industrial, and Manufacturing Engineering [MIME], 2012, Program goals).

Three main educational objectives guide the MIME undergraduate program curriculum. They are that mechanical engineering graduates will: 1) be successful in their mechanical engineering profession, 2) be successful in other professional careers, and 3) continue to grow intellectually (UT MIME, 2012, Program educational objectives). These educational objectives are accompanied by several student outcomes addressing areas from designing and conducting experiments, solving engineering problems, working on multidisciplinary teams, communication, and professional and ethical practice (UT MIME, 2012, Program student outcomes).
References


Personal Philosophy of Education

The ideal education is one that acknowledges that there is no generalized ideal. Students learn best in different ways and at different paces; therefore, each individual will have a different definition of their “ideal education.” I feel that there are certain skills and capabilities that students should generally possess by certain ages or stages to ensure that they are prepared for adult life in the real world, but that does not mean that education can be “one size fits all” for achievement of those skills. I realize that a curriculum tailored to each individual’s needs may not be the most practical and therefore not always possible; however, teachers and learners have respective roles and responsibilities that can make effective learning achievable.

Learning is an active process. Both the teacher and the learner must actively contribute to the process for learning to take place. The teacher should first evaluate the needs and learning styles of the learners. Then, he or she should accordingly choose the most appropriate teaching methods and strive to create an overall environment that is most conducive to learning for that particular group of learners. Learners then must actively participate in the teaching-learning activities utilized, synthesize information, formulate their own opinions, and advocate for his or her learning needs.

Active learning is a strong tenant of philosopher John Dewey and educator Ralph Tyler (Dewey, 1944; Tyler, 1949). Furthermore, the American Occupational Therapy Association (2007, p. 678) advocates that “occupational therapy educators use active learning that engages the learner in a collaborative process that builds on prior knowledge and experience . . .” I firmly agree with this statement on the use of active learning to promote competence as an occupational therapy practitioner.
Each student enjoys and benefits from some teaching styles more than others based on his or her own learning preferences; hence, the teacher should utilize a variety of methods to engage the most students possible. Alternating teaching styles throughout a course or entire curriculum can be done in attempt to connect to students with various learning preferences. However, this does not necessarily mean that the teacher should cater to the preferences of each individual at all times. Exposing students to teaching and learning styles outside of their preferences can promote growth by learning to learn in different situations, an ability which is vital for success in the real world (Bastable et al, 2011).

I strongly believe in the use of interprofessional learning experiences, especially for those studying to be health care professionals. David and Roger Johnson state that, “working together to achieve a common goal produces higher achievement and greater productivity than does working alone” (Johnson & Johnson, 1989). Furthermore, the current health care climate increasingly calls for team collaboration in patient care in order to increase patient outcomes and patient safety, prevent and decrease errors in care, and reduce health care costs (WHO, 2010; Mayo & Meindl, 1996). In order to prepare professionals for this type of collaborative work in professional practice, students must have opportunities to engage in similar experiences with effective guidance from faculty and mentors.

Evaluation is an essential element to education. Courses and curricula should be regularly evaluated for elements particular to that course or program, including efficacy of teaching methods, efficacy of learning activities, and relevancy of content. Just as important as routinely conducting evaluations that are reliable and valid is the act of
responding to the information gathered from the evaluations and making modifications accordingly.
References


Tyler, R.W. *Basic principles of curriculum and instruction*. Chicago, IL: The University of Chicago Press.

Course Name: Occupational Therapy and Mechanical Engineering: An Interdisciplinary Assistive Technology Course

Course Number: OCCT 810 [Elective]

Credits: 3 semester hours

Contact Hours: 1 lecture, 6 lab

Semester and Level Course Offered: Spring semester, second or third year

Course Description: This is an elective course that will facilitate interprofessional teamwork between Occupational Therapy Doctorate (OTD) and Mechanical, Industrial, and Manufacturing Engineering (MIME) undergraduate Capstone students. Each team will be under the guidance of two faculty members, one from the OT department and one from the MIME department. Teams will be assigned individual clients for whom they will design and construct a piece of assistive equipment. OTD students will complete a formal case study on this process involving client evaluation and design consultations with MIME students.

Prerequisite: OCCT 806 Occupational Therapy Models of Practice VI

Instructor: Beth Ann Hatkevich, PhD., OTR/L

Office Location: HSHS 2102D

Office Hours: By appointment only

Campus Phone: 419-530-6696

Campus E-mail: Bethann.Hatkevich@utoledo.edu

Required Textbooks:


Suggested Textbooks:


**Teaching and Learning Experiences:** Various types of teaching and learning experiences are included in this course, including didactic lectures, class discussions, informal team meetings, hands-on laboratory opportunities, and self-directed study.

**Course Relationship to Curricular Foundations:**

**Relationship to the Program’s Philosophy and Mission:**
This course gives students the opportunities to further develop their competence in the practice area of assistive technology. Students will have the opportunities to practice the essential skills of client evaluation and assessment, intervention planning, interprofessional collaboration, and professionalism. This course will help students develop their professional identity as an occupational therapist as well as prepare them for practice on an interprofessional team.

**Relationship to the Program’s Curriculum Design:**
Building on the content of OCCT 806, this course will help prepare students for competent practice in the area of assistive technology. Students will be required to advocate for the profession of occupational therapy in the community and on an interprofessional healthcare team. Students will use major models of practice as a foundation on which to build therapeutic interventions, with a focus on compensatory models in this course. They will also seek out and apply relevant research to guide decisions pertaining to client evaluation and intervention planning.

**Program Goals and Related Curricular Objectives:**

Program Goal I: Practice
C - Compare, contrast, evaluate, and integrate models of practice, including multidisciplinary knowledge and apply them to specific problems of individuals and populations
E - Analyze the relationship among anatomical structure, kinesiological function, and occupational performance
F - Describe the physiological, sociological, socioeconomic, lifestyle, and diversity factors that underlie occupation.
H - Analyze sensorimotor, cognitive, and psychosocial abilities and evaluate their relationship to occupation.
K - Infer the effects of pathological conditions on the sensorimotor, cognitive, and psychosocial abilities of individuals and their occupations.
L - Analyze how long-term occupational forms can under-challenge, appropriately challenge, or excessively challenge the sensorimotor, cognitive, and psychosocial abilities of individuals.

M - Articulate screening and evaluation processes for a practice area and comprehensively evaluate clients using evidenced-based reasoning to select/create assessments through occupational synthesis.

N - Diagnose/evaluate clients by critically analyzing, interpreting, and reassessing data for the purpose of creating intervention strategies.

O - Determine individualized therapeutic goals, including those from self-change (adaptation), compensation, and prevention in occupational synthesis, as guided by a model of practice and research evidence.

P - Collaborate with the client in the planning and implementation of individualized intervention through occupational synthesis.

Q - Reassess and re-synthesize interventions to promote enhanced meaning, purpose, occupational performance, and therapeutic gain within a model of practice.

S - Communicate effectively and educate appropriately via written, oral, and nonverbal means, with clients, family members, significant others, team members, and the community at large.

T - Report, document, and discuss pertinent client data appropriately and accurately.

W - Demonstrate appropriate professional standards for documentation, reimbursement for services, referral to other professionals, supervision of OT practitioners, safety, ethics, and institutional protection.

X - Demonstrate awareness of the standards of practice and policies recommended by the AOTA.

Program Goal II: Advocacy
A - Evaluate and judge the relevance of current socio-political, economic, international, geographic, and demographic issues and trends, including population-based approaches as they affect occupational therapy practice.

B - Analyze the legal, ethical, and moral issues which impact the delivery of occupational therapy services in contemporary society.

D - Advocate within the profession for high standards of professional behavior, ethics, and practice.

I - Analyze, propose, and demonstrate methods of utilizing the expertise of others on an inter- and multidisciplinary team to maximize communication links and improve health care delivery in complex delivery systems and organizations including but not limited to care coordination, case management, and transition services in traditional and emerging practice environments.

Program Goal III: Research
B - Describe the role of basic research in examining principles underlying occupational therapy models of practice; the role of applied research in occupational synthesis for evaluation, goal-setting, and methods; and the
role of applied research testing the advocacy roles of occupational therapists.

C - Describe, analyze, critique, and interpret research protocols and articles by using principles of research design.

Program Goal IV: Autonomous Decision Making

A - Display a commitment to the study and application of occupation as a therapeutic method.

B - Accept personal responsibility for one’s learning, professional behavior, and demeanor.

C - Display increasing levels of confidence in one’s decision making throughout the curriculum and fieldwork experiences.

D - Develop skill in seeking out information (e.g., library resources, electronic media, internet searches) to compile evidence in support of practice, advocacy, and research.

E - Demonstrate independence in the ability to communicate professionally in writing (e.g., case studies, program development plans, research manuscripts, clinical documentation).

F - Conceptualize, design, and carry out oral presentations (e.g., professional conferences, family and patient interactions, team conferences, peer and supervisor interactions, to potential funding agencies).

G - Demonstrate the ability to assume leadership roles as appropriate to one’s entry to the profession.

H - Assume leadership for recognizing problems, investigating options for resolution, seeking out collaboration, implementing solutions, and evaluating outcomes.

I - Evaluate his/her own strengths and limitations and demonstrate a pro-active stance in developing and enhancing those characteristics essential to the advancement of occupational therapy.

J - Refine one’s self-directedness, and demonstrate the capacity to work autonomously and within a mentoring relationship.

K - Work successfully in teams (e.g., interdisciplinary teams and work groups) through knowledge, theory, and research regarding group/team process care coordination, case management, and transition services.

Course Corresponds to the following 2006 ACOTE Standards:

B.1.1. Demonstrate oral and written communication skills.

B.1.2. Employ logical thinking, critical analysis, problem solving, and creativity.

B.1.3. Demonstrate competence in basic computer use, including the ability to use databases and search engines to access information, word processing for writing, and presentation software (e.g., PowerPointTM).

B.1.8. Articulate the influence of social conditions and the ethical context in which humans choose and engage in occupations.

B.1.11. Demonstrate the ability to use technology in screening, evaluation, intervention,
and data analysis as appropriate for the area of practice.

B.2.2. Explain the meaning and dynamics of occupation and activity, including the interaction of areas of occupation, performance skills, performance patterns, activity demands, context(s), and client factors.

B.2.6. Analyze the effects of physical and mental health, heritable diseases and predisposing genetic conditions, disability, disease processes, and traumatic injury to the individual within the cultural context of family and society on occupational performance.

B.2.7. Exhibit the ability to analyze tasks relative to areas of occupation, performance skills, performance patterns, activity demands, context(s), and client factors to formulate an intervention plan.

B.2.8. Use sound judgment in regard to safety of self

B.2.10. Use clinical reasoning to explain the rationale for and use of compensatory strategies when desired life tasks cannot be performed.

B.2.11. Analyze, synthesize, evaluate, and apply models of occupational performance and theories of occupation.

B.3.1. Apply theories that underlie the practice of occupational therapy.

B.3.2. Compare, contrast, and integrate a variety of models of practice and frames of reference that are used in occupational therapy.

B.3.3. Use theories, models of practice, and frames of reference to guide and inform evaluation and intervention.

B.3.4. Analyze and discuss how history, theory, and the sociopolitical climate influence and are influenced by practice.

B.4.1. Use standardized and nonstandardized screening and assessment tools to determine the need for occupational therapy intervention. These include, but are not limited to, specified screening tools; assessments; skilled observations; checklists; histories; consultations with other professionals; and interviews with the client, family, significant others, and community.

B.4.2. Select appropriate assessment tools based on client needs, contextual factors, and psychometric properties of tests. These must be relevant to a variety of populations across the life span, culturally relevant, based on available evidence, and incorporate use of occupation in the assessment process.

B.4.3. Use appropriate procedures and protocols (including standardized formats) when administering assessments.

B.4.4. Evaluate client(s)’ occupational performance in activities of daily living (ADL), Instrumental activities of daily living (IADL), education, work, play, leisure, and social participation. Evaluation of occupational performance using standardized and nonstandardized assessment tools includes

• The occupational profile, including participation in activities that are meaningful and necessary for the client to carry out roles in home, work, and community environments.

• Client factors, including body functions (e.g., neuromuscular, sensory, visual, perceptual, cognitive, mental) and body structures (e.g., cardiovascular, digestive, integumentary systems).

• Performance patterns (e.g., habits, routines, roles) and behavior patterns.
• Cultural, physical, social, personal, spiritual, temporal, and virtual contexts and activity demands that affect performance.
  • Performance skills, including motor (e.g., posture, mobility, coordination, strength, energy), process (e.g., energy, knowledge, temporal organization, organizing space and objects, adaptation), and communication and interaction skills (e.g., physicality, information exchange, relations).

B.4.6. Interpret criterion-referenced and norm-referenced standardized test scores based on an understanding of sampling, normative data, standard and criterion scores, reliability, and validity.

B.4.7. Consider factors that might bias assessment results, such as culture, disability status, and situational variables related to the individual and context.

B.4.8. Interpret the evaluation data in relation to accepted terminology of the profession, Relevant theoretical frameworks, and interdisciplinary knowledge.

B.4.11. Articulate screening and evaluation processes for a practice area. Use evidence-based reasoning to analyze, synthesize, evaluate, and diagnose problems related to occupational performance and participation.

B.5.1. Use evaluation findings to diagnose occupational performance and participation based on appropriate theoretical approaches, models of practice, frames of reference, and interdisciplinary knowledge. Develop occupation-based intervention plans and strategies (including goals and methods to achieve them) based on the stated needs of the client as well as data gathered during the evaluation process in collaboration with the client and others. Intervention plans and strategies must be culturally relevant, reflective of current occupational therapy practice, and based on available evidence. Interventions address the following components:
  • The occupational profile, including participation in activities that are meaningful and necessary for the client to carry out roles in home, work, and community environments.
  • Client factors, including body functions (e.g., neuromuscular, sensory, visual, perceptual, cognitive, mental) and body structures (e.g., cardiovascular, digestive, integumentary systems).
  • Performance patterns (e.g., habits, routines, roles) and behavior patterns.
  • Cultural, physical, social, personal, spiritual, temporal, and virtual contexts and activity demands that affect performance.
  • Performance skills, including motor (e.g., posture, mobility, coordination, strength, energy), process (e.g., energy, knowledge, temporal organization, organizing space and objects, adaptation), and communication and interaction skills (e.g., physicality, information exchange, relations).

B.5.2. Select and provide direct occupational therapy interventions and procedures to enhance safety, wellness, and performance in activities of daily living (ADL), instrumental activities of daily living (IADL), education, work, play, leisure, and social participation.

B.5.3. Provide therapeutic use of occupation and activities (e.g., occupation-based activity, practice skills, preparatory methods).

B.5.4. Provide training in self-care, self-management, home management, and community and work integration.
B.5.5. Provide development, remediation, and compensation for physical, cognitive, perceptual, sensory (e.g., vision, tactile, auditory, gustatory, olfactory, pain, temperature, pressure, vestibular, proprioception), neuromuscular, and behavioral skills.

B.5.6. Provide therapeutic use of self, including one’s personality, insights, perceptions, and judgments as part of the therapeutic process in both individual and group interaction.

B.5.8. Modify environments (e.g., home, work, school, community) and adapt processes, including the application of ergonomic principles.

B.5.9. Design, fabricate, apply, fit, and train in assistive technologies and devices (e.g., electronic aids to daily living, seating systems) used to enhance occupational performance.

B.5.10. Provide design, fabrication, application, fitting, and training in orthotic devices used to enhance occupational performance and training in the use of prosthetic devices, based on scientific principles of kinesiology, biomechanics, and physics.

B.5.11. Provide recommendations and training in techniques to enhance mobility, including physical transfers, wheelchair management, and community mobility, and address issues related to driver rehabilitation.

B.5.16. Demonstrate the ability to educate the client, caregiver, family, significant others, and communities to facilitate skills in areas of occupation as well as prevention, health maintenance, and safety.

B.5.18. Effectively interact through written, oral, and nonverbal communication with the client, family, significant others, communities, colleagues, other health providers, and the public in a professionally acceptable manner.

B.5.22. Understand when and how to use the consultative process with groups, programs, organizations, or communities.

B.5.23. Refer to specialists (both internal and external to the profession) for consultation and intervention.

B.5.24. Monitor and reassess, in collaboration with the client, caregiver, family, and significant others, the effect of occupational therapy intervention and the need for continued or modified intervention.

B.5.25. Plan for discharge, in collaboration with the client, by reviewing the needs of the client, caregiver, family, and significant others; resources; and discharge environment. This includes, but is not limited to, identification of client’s current status within the continuum of care and the identification of community, human, and fiscal resources; recommendations for environmental adaptations; and home programming to facilitate the client’s progression along the continuum toward outcome goals.


B.6.2. Critically analyze the current policy issues and the social, economic, political,
geographic, and demographic factors that influence the various contexts for practice of occupational therapy.

B.8.2. Effectively locate, understand, and evaluate information, including the quality of research evidence.

B.8.3. Use research literature to make evidence-based decisions.

B.8.8. Write scholarly reports appropriate for presentation or for publication in a peer reviewed journal.

B.9.1. Demonstrate a knowledge and understanding of the American Occupational Therapy Association (AOTA) Occupational Therapy Code of Ethics, Core Values and Attitudes of Occupational Therapy Practice, and AOTA Standards of Practice and use them as a guide for ethical decision making in professional interactions, client interventions, and employment settings.

B.9.2. Discuss and justify how the role of a professional is enhanced by knowledge of and involvement in international, national, state, and local occupational therapy associations and related professional associations.

B.9.3. Promote occupational therapy by educating other professionals, service providers, consumers, third-party payers, regulatory bodies, and the public.

B.9.7. Discuss and justify the varied roles of the occupational therapist as a practitioner, educator, researcher, policy developer, program developer, advocate, administrator, consultant, and entrepreneur.

Student Learning Outcomes:

1. Students will define the role of occupational therapy and mechanical engineering in the assistive technology process.

2. Students will apply occupational therapy and assistive technology frameworks to conduct a case study pertaining to assistive technology intervention methods.

3. Using a consultative approach, students will problem-solve with mechanical engineering students to design a piece of assistive equipment for a given client.

4. Students will justify the role of interprofessional learning experiences and interprofessional teamwork in professional practice.

5. Students will describe the stages of team development.

6. Students will demonstrate professional behavior and adhere to high ethical and moral standards.

Graduate Student Code of Ethics:
The instructor holds a student registered in this course to The University of Toledo Health Science Campus Standards of Conduct and will follow the stated procedures and sanctions outlined therein. The student is encouraged to review the Code at http://www.utoledo.edu/graduate/hsc/hsc_handbook09/index.html.
ADA Statement:
If you require special accommodations because of an identified condition that meets the requirements of ADA, please see the instructor. Special accommodations are made only for documented need. The instructor expects and encourages students to inform them at the beginning of the semester of any individual learning needs related to classroom participation and performance evaluations. Accommodation of individual requests will be based upon appropriate documentation in keeping with the American with Disabilities Act, institutional policies, and the discretion of the faculty.

Academic Support Services:
Academic support services are available through:
1. Learning Enhancement Center: http://www.utoledo.edu/centers/lec/index.html
2. The Writing Center: http://www.utoledo.edu/centers/writingcenter/

FERPA and Confidentiality:
http://www.utoledo.edu/offices/registrar/main_campus/ferpa_confident.html

Assignments and Grading:
1. Case Study: 300 pts
2. Weekly team reports (15): 75 pts (5 pts each)
3. Quiz #1 - Assistive Technology: 25 pts
4. Quiz #2 - Interprofessional Education: 25 pts
5. Participation: 5 pts

Total: 430 pts

Letter grades will be assigned as follows:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
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<tr>
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<td>B+</td>
<td>86.67 - &lt;90</td>
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<td>B</td>
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<td>60 - &lt;63.33</td>
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<td>F</td>
<td>&lt;60</td>
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**Assignment Due Dates:**
Assignments are to be submitted in hard copy form in class on the date listed on the Course Schedule unless specified otherwise. Late assignments will receive a 10% deduction in points for each day it is late. Students must pass each assignment and examination by at least 70% of the possible points. If work results in an assignment score of less than 70%, the assignments will be returned for revision until a 70% score is achieved. Approval of make-up assignments is at the discretion of the instructor.

**Attendance:**
Attendance of all class sessions is expected. This course focuses on teamwork with other students; therefore, it is essential to attend and actively participate in all class sessions, lab times, and group meetings. Timeliness of attendance is similarly expected. Students are to communicate anticipated absences in advance in keeping with professional behavior by calling (419) 530-6690 (Department Secretary). Students are responsible for missed assignments.

**Classroom Laptop Use Policy:**
The use of laptops in the classroom is recognized as a beneficial tool for students. Although the laptop computer can serve as an excellent learning tool, students must remember that it is permitted in the classroom to enhance learning relative to specific coursework. Laptop use during class is permitted ONLY for purposes specifically related to the class. Students may not use the laptop for work related to other classes or to communicate with other individuals (e.g., via email or social networking sites), unless they have been specifically instructed to do so as part of class. If a student uses the laptop for reasons not related to the course of attendance, a student’s classroom participation grade will be negatively affected.
## Course Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topic</th>
<th>Assignments/Readings</th>
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<tbody>
<tr>
<td>Week 1</td>
<td></td>
<td>Orientation to course; syllabus and assignments; pre-test survey; begin AT lecture</td>
<td></td>
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<tr>
<td>Week 2</td>
<td></td>
<td><strong>No Class: MLK Holiday</strong></td>
<td></td>
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</table>
| Week 3 | | *Attend ME 4200, 3:30pm-6:00pm: Design Process, Team member responsibilities*  
AT: History, Major Legislation, Definitions | C & P: Ch 1 |
| Week 4 | | *Attend ME 4200, 3:30pm-6:00pm: House of Quality, Presentation Overview*  
AT: Frameworks, Professional Practice | C & P: Ch. 2 |
| Week 5 | | **Presentations: Design Proposals (ME 4200, 3:30pm-6:00pm)** | Written report due in class (Intro, Eval, Goals, AT designs) |
| Week 6 | | Interprofessional Education (IPE): Why, Team Development, Conflict Resolution | AT Quiz (take at beginning of class)  
C: Ch. 2 |
<p>| Week 7 | | |  |
| Week 8 | | Lab: Interventions with client, device designs | IPE Quiz (Take at beginning of class) |
| Week 9 | | <strong>No Class: Spring Break</strong> |  |
| Week 10 | | Lab: Interventions with client, device designs |  |
| Week 11 | | <strong>Presentations (ME 4200, 3:30pm-6:00pm): Midterm Project Updates</strong> | Written report due in class (Intervention update, AT design update) |
| Week 12 | | Lab: Interventions, outcomes, designs, conclusions |  |
| Week 13 | | Lab: Interventions, outcomes, designs, conclusions |  |
| Week 14 | | Lab: Interventions, outcomes, |  |</p>
<table>
<thead>
<tr>
<th>Week</th>
<th>Event</th>
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<tr>
<td>Week 15</td>
<td>Lab: Interventions, outcomes, designs, conclusions, abstract</td>
</tr>
<tr>
<td>Week 16</td>
<td><strong>Final Presentations (ME 4200, 3:30pm-6:00pm)</strong></td>
</tr>
<tr>
<td></td>
<td>Class discussion of IPE experiences in the course; post-test survey</td>
</tr>
<tr>
<td>Week 17</td>
<td><strong>Finals Week</strong></td>
</tr>
<tr>
<td></td>
<td>Final Case Study Written Reports due by 5pm Monday (Interventions, outcomes, Design, Conclusions, References, Abstract)</td>
</tr>
</tbody>
</table>

Disclaimer: “The instructor reserves the right to amend this syllabus as deemed necessary and will communicate such amendment to the students in the course.”
OT Case Study

Cover Page – Due on all assignment submissions

Abstract – Due Finals Week
• Summarize key points of your case study
• 1 page or less, double-spaced

Introduction – Due at Week 5
• Introduce the patient/client’s age, diagnosis, and primary impairments.
• Name the model(s) of practice upon which to base intervention (with citation of original, primary reference, not secondary reference).
• Review the scientific evidence of the application of the model(s) of practice to relevant occupational therapy interventions.
• Briefly explain why this model(s) of practice was chosen for this case.

Evaluation – Due at Week 5
• Provide a description of client history including relevant diagnostic, demographic, background information, and previous use of assistive technology.
• Describe the assessments administered including a rationale for why they were chosen.
• Provide a summary of the results of assessments administered that are consistent with the model(s) of practice.
• Describe relevant observations of the patient/client’s occupational performance.

Goal Setting – Due at Week 5
• State the patient/client’s short-term and long-term goals for occupational therapy.
• Identify the occupational therapy goals for this patient/client based on the evaluation results.
• Justify the patient/client’s goals by referencing the models of practice and the client’s interests, roles, meanings, and purposes.
• Coordinate a plan of care that involves OT, engineering, family, and other stakeholders; identify other disciplines whose involvement would be beneficial.

Assistive Technology Designs – Due at Week 5
• Discuss the proposed designs including their rationales, pros, and cons; House of Quality.
• State the final design chosen for the client and explain why it was chosen.
• Describe how this design will benefit the client.
• Describe how this design relates to empirical evidence in the areas of assistive technology and models of practice.

Interventions Update – Due at Midterm
• Describe the primary occupational forms used in that address one or more goals for this patient/client.

• Describe one therapeutic occupation that was particularly interesting and effective. Make careful note of:
  o Changes you made in the planned occupation and the rationale for these changes;
  o The actual occupational performances you observed;
  o Inferred meanings and purposes for the person;
  o Assessment information gained through observation of occupational performance;
  o Compensations made by the clients and/or inferred adaptations; and
  o How and why you would re-synthesize the occupational form.

• NOTE: If your group has not implemented interventions by midterm, then discuss:
  o Your future plans for meeting with the client;
  o Occupation(s) you plan to do;
  o Planned occupational form(s);
  o Potential inferred meanings and purposes for the client;
  o Potential compensations and/or adaptations made by the client;
  o Assessment information you will gain through observation of that occupational performance.

Design Modifications Update – Due at Midterm
• Describe any modifications that your team has decided to make to the design of your assistive technology.
• Provide rationale for these modifications.

Interventions – Due Finals Week
• Describe the primary occupational forms used in that address one or more goals for this patient/client.
• Describe one therapeutic occupation that was particularly interesting and effective. Make careful note of:
  o Changes you made in the planned occupation and the rationale for these changes;
  o The actual occupational performances you observed;
  o Inferred meanings and purposes for the person;
  o Assessment information gained through observation of occupational performance;
  o Compensations made by the clients and/or inferred adaptations; and
  o How and why you would re-synthesize the occupational form.

Outcomes – Due Finals Week
• Describe whether or not intervention goals were achieved as a result of the intervention.
• Compare the client’s scores on the standardized assessments from initial evaluation to discharge and describe any changes.
• Describe any inferred meanings and purposes of your client based on the interventions.
• Describe the client/patient’s report on his/her progress.
• Explain whether or not the client met his/his self-identified goals for therapy.
• Describe changes the client experienced in other areas of life, not specified in the formal goals.
• When feasible, describe the client at follow-up visits and assessments after discharge from occupational therapy.

Design – Due Finals Week
• Describe the final design of your assistive technology.
• Describe any modifications made from midterm report with rationale for these modifications.

Conclusions – Due Finals Week
• Describe the discharge recommendations for the client.
• Explain the implications of this case to the identified model(s) of practice and to occupational therapy.
• Explain the implications of the case study for research.
• How is this case innovative, thereby contributing new knowledge to the profession of occupational therapy and engineering?

References – Update and submit throughout
# Case Study Rubric: Week 5

<table>
<thead>
<tr>
<th>Points Received</th>
<th>Points Possible</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gives relevant background information of the client</strong></td>
<td>10</td>
</tr>
<tr>
<td><strong>Identifies model(s) of practice and justifies its use</strong></td>
<td>10</td>
</tr>
<tr>
<td><strong>Describes evaluation process including standardized and non-standardized assessment tools used, observations made, and a summary of results</strong></td>
<td>15</td>
</tr>
<tr>
<td><strong>Identifies client goals</strong></td>
<td>10</td>
</tr>
<tr>
<td><strong>Identifies OT intervention goals set in collaboration with the client</strong></td>
<td>10</td>
</tr>
<tr>
<td><strong>Describes proposed intervention designs including the actual designs, pros, and cons of each</strong></td>
<td>10</td>
</tr>
<tr>
<td><strong>Identifies the final chosen design and justifies this choice</strong></td>
<td>10</td>
</tr>
<tr>
<td><strong>References</strong></td>
<td>10</td>
</tr>
<tr>
<td><strong>Spelling, grammar, APA formatting</strong></td>
<td>5</td>
</tr>
<tr>
<td><strong>Oral presentation: Addresses key points of report clearly and succinctly</strong></td>
<td>10</td>
</tr>
<tr>
<td><strong>Oral presentation: Speaks clearly, avoids distracting mannerisms, professional dress</strong></td>
<td>10</td>
</tr>
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<td><strong>Total</strong></td>
<td><strong>110</strong></td>
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**Comments:**
## Case Study Rubric: Midterm

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<thead>
<tr>
<th>Description</th>
<th>Points Received</th>
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<tbody>
<tr>
<td>Describes interventions conducted including the occupational forms,</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>occupations, inferred meanings and purposes, compensations, adaptations,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>modifications made, and future intervention plans; If no interventions done</td>
<td></td>
<td></td>
</tr>
<tr>
<td>to date, describes detailed plans for future intervention plans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Describes and justifies any modifications made to the design of the</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>assistive technology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>References</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Spelling, grammar, APA formatting</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Oral presentation: Addresses key points of report clearly and succinctly</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Oral presentation: Speaks clearly, avoids distracting mannerisms, professional dress</td>
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**Comments:**
## Case Study Rubric: Final

<table>
<thead>
<tr>
<th>Points Received</th>
<th>Points Possible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover page – accurate APA formatting</td>
<td>5</td>
</tr>
<tr>
<td>Abstract – clear, succinct, accurate APA formatting</td>
<td>10</td>
</tr>
<tr>
<td>Describes interventions conducted including the occupational forms, occupations, inferred meanings and purposes, compensations, adaptations, modifications made</td>
<td>15</td>
</tr>
<tr>
<td>Describes the final design of the device and justifies any modifications made to the design since the status at midterm</td>
<td>10</td>
</tr>
<tr>
<td>Identifies whether or not client and OT goals were met as a result of services</td>
<td>10</td>
</tr>
<tr>
<td>Describes re-assessment process including standardized and non-standardized assessment tools used, observations, and a summary of results</td>
<td>15</td>
</tr>
<tr>
<td>Describes discharge recommendations for the client</td>
<td>10</td>
</tr>
<tr>
<td>Describes implications of this case study for future research</td>
<td>10</td>
</tr>
<tr>
<td>Described the implications of this case study for OT and ME practice</td>
<td>10</td>
</tr>
<tr>
<td>References</td>
<td>10</td>
</tr>
<tr>
<td>Spelling, grammar, APA formatting</td>
<td>5</td>
</tr>
<tr>
<td>Oral presentation: Addresses key points of report clearly and succinctly</td>
<td>10</td>
</tr>
<tr>
<td>Oral presentation: Speaks clearly, avoids distracting mannerisms, professional dress</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>130</td>
</tr>
</tbody>
</table>

Comments:
Course Sequence and Content

The sequence of lectures and content will now be described in greater depth. Each lecture has a chart showing learning outcomes, required and suggested readings, lecture content, session timeline, learning activities, and instructional media. The charts are accompanied by presentation materials, handouts, and quizzes that correspond to each class session.

Week 1

The first week of the class will serve as an orientation to the course structure and assignments. Students from both the occupational therapy and engineering programs will be introduced to one another and form their interdisciplinary teams. The lecture content for week one is shown below. The team meeting time should be used for team members to more formally introduce themselves, exchange contact information, class schedules, etc. Teams will also be required to complete a weekly team update form which should be signed by all group members and submitted to the course instructor. This form must be submitted each week of the course to document group progress. If time allows, students can begin reviewing the Team Pact handout with their team members and start filling it out. This handout will be more formally introduced in week six and students can complete the form or make modifications if needed at that time.

<table>
<thead>
<tr>
<th>Session: 1</th>
<th>Date: Week 1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Learning Outcomes:</strong></td>
<td></td>
</tr>
<tr>
<td>a. Demonstrate an understanding of the interdisciplinary structure of the course</td>
<td></td>
</tr>
<tr>
<td>b. Demonstrate an understanding of the requirements of the case study assignment</td>
<td></td>
</tr>
<tr>
<td>c. Demonstrate an understanding of remaining course assignments and requirements</td>
<td></td>
</tr>
<tr>
<td><strong>Required Readings:</strong></td>
<td></td>
</tr>
<tr>
<td>a. Course syllabus</td>
<td></td>
</tr>
<tr>
<td>b. Case study assignment description</td>
<td></td>
</tr>
<tr>
<td>Timeline</td>
<td>Content</td>
</tr>
<tr>
<td>----------</td>
<td>----------------------------------------------</td>
</tr>
<tr>
<td>6:00pm</td>
<td>Introduce course, student introductions</td>
</tr>
<tr>
<td>6:30pm</td>
<td>Review syllabus</td>
</tr>
<tr>
<td>7:00pm</td>
<td>Break</td>
</tr>
<tr>
<td>7:10pm</td>
<td>Review Case Study assignment</td>
</tr>
<tr>
<td>7:50pm</td>
<td>Break</td>
</tr>
<tr>
<td>8:00pm</td>
<td>Take IPE pre-test survey</td>
</tr>
<tr>
<td>8:15pm</td>
<td>Team meeting time</td>
</tr>
</tbody>
</table>

References:
Weekly Team Update

Team Member Names: Date of meeting:

What was accomplished in past week:

Plan for upcoming week:

Date of next team meeting:

Signatures of all team members:
Team Pact

Names Team Members:  

Date:

Team Goals:

Team Rules:

Conflict Resolution:

Team Member Signatures:
Week 2

Class will not be held during week two in observance of the university-recognized Martin Luther King, Jr. holiday.

Week 3

During week three, OTD students will have the added requirement of attending the MIME Capstone course (ME 4200) lecture. The topics of this lecture will be an overview of the engineering design process and team member responsibilities. After the ME 4200 lecture, students will attend OCCT 810 at the regularly scheduled time. The team meeting time at the end of the lecture might be used for team members to schedule future meeting times, share progress in evaluations and device designs, and/or work on the class presentation and report.

<table>
<thead>
<tr>
<th>Session: 2</th>
<th>Date: Week 3</th>
</tr>
</thead>
</table>

**Learning Outcomes:**

a. Demonstrate understanding of historical roles of OT and engineering in assistive technology
b. Identify major legislation pertaining to assistive technology services

c. Define basic definitions relating to assistive technology and assistive technology services

**Required Readings:**

a. Cook & Polgar, Ch 1

<table>
<thead>
<tr>
<th>Timeline</th>
<th>Content</th>
<th>Learning Activities</th>
<th>Instructional Media</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:00pm</td>
<td>Begin lecture on History of AT use</td>
<td>Take notes, ask questions to clarify</td>
<td>PowerPoint slides</td>
</tr>
<tr>
<td>6:45pm</td>
<td>Begin lecture on Major U.S. Legislation</td>
<td>Take notes, ask questions to clarify</td>
<td>PowerPoint slides; refer to Cook and Polgar, Ch 1</td>
</tr>
<tr>
<td>7:15pm</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7:25pm</td>
<td>Begin lecture on AT definitions</td>
<td>Take notes, ask questions to clarify</td>
<td>PowerPoint slides; refer to Cook and Polgar, Ch 1</td>
</tr>
<tr>
<td>Time</td>
<td>Activity</td>
<td>Source</td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>---------------------</td>
<td>-------------------------</td>
<td></td>
</tr>
<tr>
<td>8:00pm</td>
<td>Team meeting time</td>
<td>Polgar, Ch 1</td>
<td></td>
</tr>
</tbody>
</table>

**References:**
Assistant Technology: History, Legislation, and Definitions

Objectives
- Students will:
  - demonstrate understanding of historical roles of OT and engineering in assistive technology.
  - identify major legislation pertaining to assistive technology services.
  - define basic definitions relating to assistive technology and assistive technology services.

History of Assistive Technology

General History of AT
- AT always based on the best materials/technology available at the time
- Stone Age
- Civil War
- Recent technological advances

ME and AT
- WWII
  - VA Prosthetics Research Board
  - Inc funding to train orthotists/prosthetists
- Thalidomide incident
  - AT now also for women and children
- Growth in 1970s
  - Rehabilitation Act of 1973
  - Rehab Engineering Centers (RECs)
  - RESNA
- 1990s
  - Increased funding for research and services

OT and AT
- More formally began in mid-1900s
  - WWII
  - Medical model
- Major growth in last 30 years
  - Technological advances
- AOTA Position Paper, 1998
  - Formal justification of OT’s role in AT

Cook & Polgar, 2008
Kielhofner, 2008
Szeto, (n.d.)
Major U.S. Legislation and AT

Rehabilitation Act of 1973
- Defines rehab tech, rehab eng, AT devices, AT services
- Discourages discrimination based on disability by requiring reasonable accommodation in federally funded programs
- Equal access to electronic office equipment for all federal employees
- AT must be included in voc rehab plans

Cook & Polgar, 2008

IDEA
- Individuals with Disabilities Education Act (IDEA) Amendments of 1997
  - Reasonable accommodation in school
  - Least restrictive environment
  - Provision of AT in IEPs for those 3-21 years
  - Expanded AT services for those birth to 2 years

Cook & Polgar, 2008

Legislation, cont
  - First legislation with specific focus on expanding AT services
  - Supporting grants/funding, advocacy efforts
- Americans with Disabilities Act of 1990
  - Bans discrimination based on disability
  - Includes employment, transportation, telecommunications, public facilities, government facilities

Cook & Polgar, 2008

Legislation, cont
- Medicaid
  - Income-based
  - State-run with general federal guidelines
  - Largest funding source for AT
- Medicare
  - 65 years or older, or those permanently disabled
  - Federally administered
  - Major funding source for AT (DME)

Cook & Polgar, 2008

Defining Assistive Technology
Definitions

- **Technology**
  1. the science of study of the practical or industrial arts
  2. applied science
  3. a method, process, and so forth for handling a specific technical problem

McKechnie, 1983

---

Definitions, cont

- **PL 108-364 of Assistive Technology Act of 1998 (amended in 2004) defined assistive technology device as:**
  - “Any item, piece of equipment or product system whether acquired commercially off the shelf, modified, or customized that is used to increase, maintain or improve functional capabilities of individuals with disabilities.”

---

Definitions, cont

- **Assistive Technology**
  - Includes relevant devices, strategies, services, practices applied to problems experienced by individuals with disabilities

Cook & Polgar, 2008

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Definitions, cont

- **PL 108-364 defines assistive technology service as:**
  - “Any service that directly assists an individual with a disability in the selection, acquisition, or use of an assistive technology device”

Cook & Polgar, 2008

---

Definitions, cont

- **Assistive Technology System**
  - “an assistive technology device, a human operator who has a disability, and an environment in which the functional activity is to be carried out.”

Cook & Polgar, 2008

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Engineering Definitions

- **Rehabilitation technology**
  - Segment of AT
    - “Rehabilitate an individual from his/her present set of limitations due to some disabling condition, permanent or otherwise”

- **Orthotic**
  - augment function of an extremity

- **Prosthetic**
  - replace a body part functionally and structurally

Szeto, n.d.
Characterization of AT

- Rehabilitative/educational technologies vs. assistive technologies
- Low ↔ High
- Hard ↔ Soft
- Min ↔ Max
- General vs. Specific
- Appliance vs. Tool
- Commercial ↔ Custom

Cook & Polgar, 2008

References


Questions?
Week 4

During week four, OTD students will have the added requirement of attending the MIME Capstone course (ME 4200) lecture. The topics of this lecture will be house of quality and an overview of presentation requirements. After the ME 4200 lecture, students will attend OCCT 810 at the regularly scheduled time. The team meeting time at the end of the lecture might be used for team members to schedule future meeting times, share progress in evaluations and device designs, and/or work on the class presentation and report.

<table>
<thead>
<tr>
<th>Session: 3</th>
<th>Date: Week 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Learning Outcomes:</strong></td>
<td></td>
</tr>
<tr>
<td>a. Identify and explain relevant OT frameworks for AT</td>
<td></td>
</tr>
<tr>
<td>b. Identify and explain relevant ME frameworks for AT</td>
<td></td>
</tr>
<tr>
<td>c. Explain the AT process</td>
<td></td>
</tr>
<tr>
<td>d. Explain the professional roles of OTs and MEs in AT</td>
<td></td>
</tr>
<tr>
<td>e. Locate resources relevant to AT for design and professional practice</td>
<td></td>
</tr>
<tr>
<td>f. Explain the roles of ethics and professional and standards as an AT practitioner</td>
<td></td>
</tr>
<tr>
<td><strong>Required Readings:</strong></td>
<td></td>
</tr>
<tr>
<td>a. Cook &amp; Polgar, Ch 2</td>
<td></td>
</tr>
<tr>
<td><strong>Timeline</strong></td>
<td><strong>Content</strong></td>
</tr>
<tr>
<td>6:00pm</td>
<td>Begin lecture on AT Frameworks/ AT process</td>
</tr>
<tr>
<td>7:00pm</td>
<td>Break</td>
</tr>
<tr>
<td>7:15pm</td>
<td>Continue lecture on professional practice</td>
</tr>
<tr>
<td>8:00pm</td>
<td>Team meeting time</td>
</tr>
</tbody>
</table>

**References:**
Assistive Technology: Frameworks and Professional Practice

BETH DEREMER, OTD STUDENT
SPRING 2012

Objectives

- Students will:
  - identify and explain relevant OT frameworks for AT.
  - identify and explain relevant ME frameworks for AT.
  - explain the AT process.
  - explain the professional roles of OTs and MEs in AT.
  - locate resources relevant to AT for design and professional practice.
  - explain the roles of ethics and professional and standards as an AT practitioner.

AT Frameworks

ICF

International Classification of Functioning, Disability, and Health

- Importance of envt
- Person-first language
- Focus on function, not disability

- Components
  - Body structures and functions
  - Activities and participation

- Contexts
  - Person factors
  - Environmental factors

ICF, cont

- Components:
  - Body structures and functions
    - Structures: nervous, voice & speech, musculoskeletal, ear & eye
    - Functions: Mental, sensory, voice & speech, musculoskeletal & movement, cardio
  - Activities and participation
    - Learning & applying knowledge
    - Communication
    - Self-care
    - Domestic life
    - Relationships
    - Work and education

ICF, cont

- Contextual factors:
  - Personal factors
    - age, sex, race, lifestyle habits, social & cultural backgrounds
  - Environmental factors
    - accessibility, natural and man-made envt, people that provide physical and emotional support, attitudes, services, systems, policies, products and technology

WHO, 2012
ICF, cont

- ICF and AT
  - AT = environmental factor
  - Products and technology for daily personal use
  - Indoor/outdoor mobility and transportation
  - Communication
  - Education
  - Employment
  - Culture
  - Recreation
  - Sport

Cook & Polgar, 2008

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HAAT

Human Activity Assistive Technology (HAAT)

1. Human
   - Physical
   - Cognitive
   - Emotional
   - Novice vs. expert

Cook & Polgar, 2008

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HAAT, cont

2. Activity
   - Daily living/self-care
   - Work/productive
   - Play/leisure

Cook & Polgar, 2008

---------

HAAT, cont

3. Assistive Technology
   - Human-technology interface
   - Processor
   - Activity outputs
   - Environmental interface
   - Soft technologies

Cook & Polgar, 2008

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HAAT, cont

4. Context
   - Physical: natural, man-made, noise, temperature, heat, light
   - Social: attitudes of others, relationships
   - Cultural
   - Institutional

Cook & Polgar, 2008
HAAT, cont

Assistive Tech

Activity

Human

Context

Reproduced from: Cook and Polgar, 2008

CMOP

Canadian Model of Occupational Performance
- Dynamic relationship between person, envt, and occupation
- Influence on occupational performance
- Person
  - Physical, effective, cognitive
- Environment
  - Physical, social, cultural, institutional
- Occupation
  - Self-care
  - Productivity
  - Leisure
- AT?

COAT, 2002

ATOMS Project Model
- Assistive Technology Outcome Measurement System
  - Research & development project
  - University of Wisconsin-Milwaukee
  - Run by OTs
  - Studies AT outcomes to improve services
- Overview of OT process
  - Incorporating role of AT devices and services

ME Principles
- Principle #1: The user’s goals, needs, and tasks must be clearly defined, listed, and incorporated as early as possible in the intervention process.
- Principle #2: Involvement of rehabilitation professionals with differing skills and know-how will maximize the probability for a successful outcome.
- Principle #3: The user’s preferences, cognitive and physical abilities and limitations, living situation, tolerance for technology, and probable changes in the future must be thoroughly assessed, analyzed, and quantified.

Szeto, n.d.
**ME Principles, cont**

- **Principle #4:** Careful and thorough consideration of available technology for meeting the user's needs must be carried out to avoid overlooking potentially useful solutions.
- **Principle #5:** The user's preferences and choice must be considered in the selection of the assistive technology device.
- **Principle #6:** The assistive technology device must be customized and installed in the location and setting where it primarily will be used.

- **Principle #7:** Not only must the user be trained to use the assistive device, but also the attendants or family members must be made aware of the device's intended purpose, benefits, and limitations.
- **Principle #8:** Follow-up, readjustment, and reassessment of the user's usage patterns and needs are necessary at periodic intervals.

---

**Key Engineering Principles**

- Worst-case design
- Computer simulation
- Temperature effects
- Reliability
- Product safety

*Setto, n.d.*

---

**Your Roles**

- OTDs
- MIMEs

---

**AT Industry Today**

Cook & Folgar, 2008
General AT Process

- Referral and intake
- Initial evaluation
- ID skills, needs, effector site, device characteristics
- Trial period
- Recommendations
- Write proposal
- Implementation
- Follow-up
- Follow-along

9 Step AT Assessment Process in OT

1. Assessment of client/family needs
2. Assessment of client skills
3. Analysis of device characteristics
4. General matching of client/device
5. Equipment trials
6. System trials
7. System recommendations
8. Final system recommendations
9. General matching of client/device

ME AT Process

- Analysis
  - When, where, how often the problem arises
  - What is the enviroment/task situation?
  - How have others done this task?
  - Environmental constraints
  - Psychosocial constraints
  - Financial considerations

ME AT Process, cont

- Evaluation
  - 2 or 3 most promising designs undergo further eval
  - Mockups, field trials, simulations, drawings
  - Rate how well each solution meets client needs
- Decision
  - Compromise!
  - More than one design may appear equally satisfactory
  - Carefully consider user’s preference

ME AT Process, cont

- Implementation
  - Fabricate, fit, install final design solution
  - Create prototype and try it out
  - Modify design if needed

RESNA

- Rehabilitation Engineering and Assistive Technology Society of North America
  - National certifications:
    - Assistive Technology Professional (ATP)
    - Rehabilitation Engineering Technologist (RET)
    - Seating and Mobility Specialist (SMS)
  - Typical backgrounds in OT, PT, SLP, Eng, RT
  - Adopted a Code of Ethics in 1991
  - Standards of Practice for AT Practitioners and Suppliers

Szteo, n.d.

Szeto, n.d.

RESNA, 2010
RESNA, cont

RESNA Code of Ethics

- Hold paramount the welfare of persons served professionally.
- Practice only in their area(s) of competence and maintain high standards.
- Maintain the confidentiality of privileged information.
- Engage in no conduct that constitutes a conflict of interest or that adversely reflects on the association and, more broadly, on professional practice.
- Seek deserved and reasonable remuneration for services.
- Inform and educate the public on rehabilitation/assistive technology and its applications.
- Issue public statements in an objective and truthful manner.
- Comply with the laws and policies that guide professional practice.

RESNA, n.d.

Ethics and Standards

- Each ATP must also comply with the ethics and standards of his/her respective discipline
- Transdisciplinary team approach
  - Threatening? or
  - Supporting?

Cook & Polgar, 2008

ME Ethics/Standards

- NSPE Code of Ethics for Engineers
  - Fundamental Canons
  - Rules of Practice
  - Professional Obligations

NSPE, 2007

OT Ethics/Standards

- AOTA Code of Ethics (2010)
  - Beneficence: promote well-being, do good
  - Nonmaleficence: do no harm
  - Autonomy/Confidentiality: respect the client’s rights and point of view
  - Social Justice: provide fair and equitable services; advocate for clients to obtain services
  - Procedural Justice: comply with institutional rules, governmental laws, AOTA policies
  - Veracity: provide comprehensive, accurate, and objective information; truthful; honest
  - Fidelity: respect, fairness, discretion, integrity

OT Ethics/Standards

QA

- Quality Assurance
  - Devices AND services
    - Measured by certification of practitioners, performance/functional outcomes, manufacturing practices
  - Three views: the consumer, the practitioner, the supplier
    - Consumer: How does this device help me in my daily life? Has my function improved?
    - Practitioner: Establishes performance measures to assess; evaluates efforts, motivation, functional outcomes
    - Purchaser: Is this cost effective?

Cook & Polgar, 2008

AT Standards

- RESNA.org
  - Practitioner, supplier credentialing
- National Registry of Rehabilitation Technology Suppliers (NRRTS), nrrts.org
  - AT supplier credentialing
- Rehabilitation Accreditation Commission (CARF), carf.org
  - Accreditation for rehab organizations
- FDA.gov
  - Standards for devices
Where can I get ideas?

- ABLEDATA
- RESNA.org
- AOTA.org
- APTA.org
- AT/rehab tech product catalogs

References


References, cont


References, cont


**Week 5**

Initial class presentations will take place at week five during the ME 4200 class time. Written reports are due at the time of presentation in hard copy form.

**Week 6**

The team pacts initially introduced during week one is formally reviewed at the end of the lecture during this week. If students had the opportunity to start the form in week one, they should review and finalize it during this class session. One copy should be turned in to the course instructor, one to each team faculty mentor, and one for each team member. Team meeting time may be used for team members to plan future team meetings, update each other on progress pertaining to device design and interventions, and/or work on the midterm presentation and report.

<table>
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<tr>
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<th><strong>Date</strong>: Week 6</th>
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<tr>
<td><strong>Learning Outcomes:</strong></td>
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</tr>
<tr>
<td>a. Define “interprofessional education”</td>
<td></td>
</tr>
<tr>
<td>b. Identify and define other forms of collaboration between professional disciplines</td>
<td></td>
</tr>
<tr>
<td>c. Explain the academic and professional benefits of interdisciplinary education</td>
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<tr>
<td>d. Identify and explain models of group development</td>
<td></td>
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<tr>
<td>e. Identify strategies for team conflict resolution and formulate new strategies for team conflict resolution</td>
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<tr>
<td><strong>Required Readings:</strong></td>
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<tr>
<td>a. Cole, Ch 2</td>
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<table>
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<tr>
<th><strong>Timeline</strong></th>
<th><strong>Content</strong></th>
<th><strong>Learning Activities</strong></th>
<th><strong>Instructional Media</strong></th>
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<tr>
<td>6:00pm</td>
<td>AT quiz</td>
<td>Taking quiz individually</td>
<td>Written form</td>
</tr>
<tr>
<td>6:30pm</td>
<td>Begin IPE lecture</td>
<td>Take notes, ask questions to clarify</td>
<td>PowerPoint slides</td>
</tr>
<tr>
<td>7:10pm</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7:20pm</td>
<td>Finish IPE lecture</td>
<td>Take notes, ask questions to clarify</td>
<td>PowerPoint slides</td>
</tr>
</tbody>
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### References:

<table>
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<tr>
<th>Time</th>
<th>Activity</th>
<th>Interaction</th>
<th>Handout</th>
</tr>
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<tbody>
<tr>
<td>7:40pm</td>
<td>Team Pacts</td>
<td>Group interaction</td>
<td>Team Pact handout</td>
</tr>
<tr>
<td>8:10pm</td>
<td>Team meeting time</td>
<td>Group interaction</td>
<td></td>
</tr>
</tbody>
</table>
Objectives

Students will:
- define “interprofessional education.”
- identify and define other forms of collaboration between professional disciplines.
- explain the academic and professional benefits of interdisciplinary education.
- identify and explain models of group development.
- identify strategies for team conflict resolution and formulate new strategies for team conflict resolution.

What is IPE?

Interprofessional Education
- “occurs when two or more professions learn about, from, and with each other to enable effective collaboration and improve health outcomes” (WHO, 2010)

Other models

Multidisciplinary:
- Gatekeeper
- Individual decision-making
- Make own goals and plans
- Shared communication

Transdisciplinary
- Share knowledge, skills, and responsibilities beyond what traditionally belongs to your discipline
- Blurring of boundaries
- Cross-training
- Flexibility

Why IPE?

- Improve health outcomes
- Strengthen health care systems
- Improve patient safety
- Decrease clinical error
- Better-prepared professionals
- Collaborative practice-ready workforce
- Reduce costs
- Increased efficiency and effectiveness
- Innovation

References:
- Dyer, 2003
- Mayo & Meindl, 1996
- WHO, 2010
Student Benefits

- Gain real-world experience
- Learn about other professions
- Better understand own professional role
- Gain communication skills
- Gain team skills
- Breaking down stereotypes of other professions
- “the best way of learning to work together was by doing it” (Carpenter & Hewstone, 1996)

Effective IP Teams

- Competence
- Communication
- Cooperation
- Coordinate efforts
- Problem-solve together
- Pool together skills, expertise, knowledge
- Make decisions together
- Respect each others’ competencies
- Adaptable to change
- Identify shared values

Stages of IP Team Development

- Farrell et al., 2001
  - Informal Role Theory
    - Interpersonal relationships change in predictable ways
    - Team culture
    - 4 Stages:
      1. Forming
      2. Storming
      3. Norming
      4. Performing

Informal Role Theory: Forming

1. Forming stage
   - “High anomie”
   - Lack shared vision, mission, norms
   - Vision and mission as arbitrary
   - Confusion about roles and procedures
   - Lack direction in team meetings, decision-making
   - Ambiguity, alienation
   - Search for leadership: superman/woman or tyrant?
   - Stereotyping

Informal Role Theory: Storming

2. Storming
   - Polarization
   - Power struggle
   - Disagreements
   - Tyrant vs. lightning rod
   - Emergence of other informal roles
Informal Role Theory: Norming

3. Norming
- Review group history
- Establish group norms
- Negotiate consensus on goals, roles, procedures
- Clarification of roles, rights, and responsibilities
- Rules and expectations
- Effective problem solving

Informal Role Theory: Performing

4. Performing
- Low anomie
- Leadership based expertise and may vary
- Roles assigned based on expertise and skill
- Role bending
- Fair and equitable workload
- Participation, respect, conflict resolution
- Open communication
- Interaction less skewed
- “Coalition of colleagues”

More Group Theory Models
- Bion, 1961
  - Flight: Avoid problem; pair up for support
  - Fight: Challenging the leader
  - Unite: Stable working group; little emotionality

Group Theory Models, cont
- Schutz, 1958
  - Inclusion: Figuring out where you fit in; seeking attention; territoriality; sizing each other up; turn to group leader for answers and action
  - Control: Figuring out much power/influence you have in the group; leadership struggle; disagreement about structure; rebellion and challenge among group members
  - Affection: conflict in leadership resolved; safety; cohesiveness; altruism; risk of regression
Group Theory Models, cont

- Yalom, 1995
  - Orientation: hesitant participation; search for meaning; dependency
  - Conflict: dominance; rebellion
  - Cohesiveness: conflict resolution; high morale; trust; non-judgment; some negativity still suppressed
  - Maturity: both neg and pos expressed freely

Mature Groups

- Have a focus
- Pay attention to feelings
- Be an active participant
- Give feedback
- Be open to feedback
- Take responsibility for your accomplishments

Cale, 2005

Team Conflict

- Two types
  1. Substantive: scope of practice, differing philosophical perspectives
  2. Emotional: personality differences, power struggles

Brown et al, 2011

Sources of Conflict

- Role boundary issues
- Scope of practice
- Accountability

Brown et al, 2011

Barriers to Conflict Resolution

- Lack of time
- Workload issues
- People in less powerful positions
- Not recognizing conflict
- Lack of motivation to resolve conflict
- Avoiding confrontation

Brown et al, 2011

Strategies for Conflict Resolution

- Team strategies
  - Team leader interventions
  - Develop team-specific conflict resolution protocols
- Individual strategies
  - Communicate openly and directly
  - Be willing to find solutions
  - Be respectful
  - Practice humility

Brown et al, 2011
## Team Pacts

- **Team goals**
- **Team “rules”**
  - Communication?
  - Meeting times?
  - Timeliness with feedback and completion of duties?
- **Conflict Resolution**

## References

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Title and Details</th>
</tr>
</thead>
</table>
Quiz: Assistive Technology

1) Name two factors that contributed to the growth of the role of engineering in assistive technology. (1 pt each, 2 total)
   a.
   b.
   Possible Answers:
   - Increased number of disabled veterans from WWII
   - Increased funding from the VA for research centers and training
   - Thalidomide incident
   - Rehabilitation Act of 1973
   - Development of RESNA

2) When did the use of AT formally begin in occupational therapy? (2 pts)
   a. Early 1900s
   b. WWII
   c. 1990s
   d. 2000s

3) Name the three components of an assistive technology system. (1 pt each, 3 total)
   a. Assistive technology device
   b. Human user of the assistive technology device
   c. Environment in which the functional activity is to be carried out

4) The four components of HAAT model are: (1 pt each, 4 total)
   a. Human
   b. Activity
   c. Assistive Technology
   d. Context

5) Worst-case design, temperature, reliability, and product safety are key principles of what profession? (2 pts)
   Answer: Engineering

6) This is an interdisciplinary professional organization for the advancement of rehabilitation and assistive technology: (2 pts)
   a. AOTA
   b. NSPE
   c. RET
7) This term refers to the value placed on sound professional practice, manufacturing processes, functional outcomes, and customer satisfaction. (2 pts)
   a. Quality assurance
   b. Re-assessment
   c. Confidentiality
   d. Procedural Justice

8) True or false: Practitioners in assistive technology must only adhere to the Code of Ethics set forth by RESNA. (2 pts)
   False

9) The first step of any AT process is: (2 pts)
   a. Training the client to use a device safely
   b. Analysis of the client’s needs
   c. Find an assistive device and let the client use it for a trial period of a determined length
   d. Write a grant proposal for funding

10) Which of the following are elements of today’s AT industry? Circle all that apply. (4 pts)
    a. Client-centered care
    b. Manufacturing
    c. Applied research
    d. Education and Training
Week 7

This week will be reserved as a class time to address any outstanding lecture content that was not yet covered in lecture due to time constraints or other issues. Team meeting time may be used for team members to plan future team meetings, update each other on progress pertaining to device design and interventions, and/or work on the midterm presentation and report.

### Learning Outcomes:
- a. Define “interprofessional education”
- b. Identify and define other forms of collaboration between professional disciplines
- c. Explain the academic and professional benefits of interdisciplinary education
- d. Identify and explain models of group development
- e. Identify strategies for team conflict resolution and formulate new strategies for team conflict resolution

### Required Readings:
- a. Cole, Ch 2

### Timeline

<table>
<thead>
<tr>
<th>Time</th>
<th>Content</th>
<th>Learning Activities</th>
<th>Instructional Media</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:00pm</td>
<td>Finish any remaining IPE lecture content (or other outstanding content)</td>
<td>Take notes, ask questions to clarify</td>
<td>PowerPoint slides</td>
</tr>
<tr>
<td>7:00pm</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7:10pm</td>
<td>Team meeting time/lab time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8:15pm</td>
<td>Midterm course/instructor evaluations</td>
<td>Complete evaluations individually</td>
<td>Evaluation handouts</td>
</tr>
</tbody>
</table>

### References:
Week 8

This week will begin with a brief in-class quiz on interprofessional education lecture content. The course instructor may alternatively allow students to complete this quiz on Black Board. After completion of the quiz, the remaining class time reserved as a working lab for the teams. As in previous group meeting times, teams may use this time to plan future team meetings, update each other on progress pertaining to device designs and interventions, and/or work on the midterm presentation and report.
Quiz: Interprofessional Education

1. Interprofessional teams are formed when: (2 pts)
   a. individuals of two or more professions share knowledge and communicate with one other, but make their own goals and intervention plans.
   b. individuals from two or more professions engage in collaborative communication, establish team goals and plans, and problem solve beyond the confines of their own disciplines.
   c. individuals of two or more professions share knowledge, skills, and responsibilities beyond what traditionally belongs to his/her own discipline; this often involves the blurring of boundaries and cross-training.

2. List 5 potential benefits of interprofessional teams, professionally and/or as a student. (1 pt each, 5 total)
   a.
   b.
   c.
   d.
   e.

Possible Answers:
- Gain real-world experience
- Learn about other professions
- Better understand own professional role
- Gain communication skills
- Gain team skills
- Breaking down stereotypes of other professions
- Improve health outcomes
- Strengthen health care systems
- Improve patient safety
- Decrease clinical error
- Be better prepared for professional collaborative practice
- Reduce costs
- Increased efficiency and effectiveness
- Innovation

3. Informal Role Theory of group development is characterized by what phases? (2 pts)
   a. Flight, Fight, Unite
   b. Inclusion, Control Affection
c. Forming, Storming, Norming, Performing

d. Orientation, Conflict, Cohesiveness, Maturity

4. There are two types of team conflicts. One type is called emotional and refers to conflict arising from differences in personalities and power struggles. Name and describe the second type of conflict. (4 pts)

**Answer:**
**Substantive** team conflicts: arising from issues relating to scope of practice and/or differing philosophical perspectives

5. Name 3 barriers to resolving a group conflict. (1 pt each, 3 total)
   a. 
   b. 
   c. 

**Possible Answers:**
- Lack of time
- Workload issues
- People in less powerful positions afraid to speak up
- Not recognizing conflict
- Lack of motivation to resolve conflict
- Avoiding confrontation

6. We discussed a model of group development with the four phases of forming, storming, norming, and performing. Which stage is characterized by a search for leadership, lacking a shared vision and direction, and confusion about roles and procedures? (2 pts)
   a. Forming
   b. Storming
   c. Norming
   d. Performing

7. Based on the same model in the previous question, which stage is characterized by roles that are assigned by expertise and skill, fair and equitable workload, open communication, and a “coalition of colleagues”? (2 pts)
   a. Forming
   b. Storming
   c. Norming
   d. Performing
8. Effective interprofessional teams are based on all of the following EXCEPT:
(2 pts)
   a. Relying on stereotypes of the professions involved on the team
   b. Bringing one’s own discipline-specific insight to an issue
   c. Pooling of expertise
   d. Respecting each other’s competencies

9. Name 3 characteristics that team leaders should possess for successful team conflict resolution. (0.5 pts each)
   a. 
   b. 
   c. 
   Possible Answers:
     - Have an open-door policy
     - Accessible
     - Non-judgmental
     - Good listener
     - Humble

10. Name 3 strategies for conflict resolution at the individual level. (0.5 pts each)
    a. 
    b. 
    c. 
    Possible Answers:
     - Communicate openly and directly
     - Be willing to find solutions
     - Be respectful
     - Practice humility
Week 9

Class will not be held this week due to spring break. Students may schedule their own working times as they deem necessary.

Week 10

This class session will be reserved solely as a working lab time for teams. They may use this time to plan future team meetings, update each other on progress pertaining to device designs and interventions, and/or finalize the midterm presentation and report.

Week 11

Midterm class presentations will take place at week 11 during the ME 4200 class time. Written reports are due at the time of presentation in hard copy form.

Weeks 12-15

These weeks will be reserved solely for working lab time for teams. They may use this time to update each other on progress pertaining to device designs and interventions, and/or work on the final presentation and report.

Week 16

Final class presentations will take place at week 16 during the ME 4200 class time. Written reports will not be due until the beginning of finals week. After the presentations, students will attend OCCT 810 at the regularly scheduled time.

<table>
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<th>Session: 14</th>
<th>Date: Week 16</th>
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<tbody>
<tr>
<td><strong>Learning Outcomes:</strong></td>
<td></td>
</tr>
<tr>
<td>a. Demonstrate appreciation of interprofessional educational experience</td>
<td></td>
</tr>
<tr>
<td>b. Discuss current attitudes and perceptions of interprofessional education</td>
<td></td>
</tr>
<tr>
<td>c. Discuss changes in attitudes and perceptions of interprofessional education compared to those expressed at the beginning of the course.</td>
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<tr>
<td><strong>Required Readings:</strong></td>
<td>None</td>
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### Timeline

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<th>Content</th>
<th>Learning Activities</th>
<th>Instructional Media</th>
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<tr>
<td>6:00pm</td>
<td>Complete post-test survey</td>
<td>Complete survey individually</td>
<td>Survey handout</td>
</tr>
<tr>
<td>6:15pm</td>
<td>Class discussion/reflections of IPE</td>
<td>Class discussion</td>
<td>Survey handout</td>
</tr>
<tr>
<td>7:15pm</td>
<td>Complete final course/instructor evaluations</td>
<td>Complete evaluation forms individually</td>
<td>Evaluation handouts</td>
</tr>
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</table>

### References:

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**Week 17**

Final written case study reports are due by Monday at 5:00 pm. Reports should be submitted in hardcopy form to the course instructor’s mailbox.

**Course Evaluation: OCCT 810**

This course will be evaluated using several different methods, both formally and informally. During the first class session, OTD and MIME students will complete the Interdisciplinary Education Perception Scale (IEPS) survey (Luecht, et al., 1990) assessing their perceptions of interprofessional collaboration (see Appendix C for IEPS survey). This same survey will be completed at the end of the semester to re-assess perceptions and identify changes. Reflections on and perceptions of interprofessional experiences will also be evaluated via class discussion in the final week of the course.

Student grades for quizzes and the case study will be used to assess knowledge gained, understanding of content, and professional practice skills. The course instructor via guided questions in lecture as well as during team meetings will assess these areas...
informally. This data will help determine the level to which learning outcomes and course objectives are being met.

Students will complete both midterm and final evaluations of the course and course instructor to obtain feedback on teaching methods, learning experiences, competence of the instructor. In addition, all faculty from the OTD and MIME departments involved in the course as instructors or team advisors will meet at the conclusion of the semester to share feedback and suggestions for course improvement.

**Practicum Course Evaluation: OCCT 2550**

The practicum course will also be assessed using various methods. First, student grades for quizzes and assignments will be used to assess knowledge gained and understanding of content. The course instructor via guided questions in lectures and group discussions will also assess this informally. This data will help determine the level to which learning outcomes and course objectives are being met.

Students will complete both midterm and final evaluations of the course and course instructor to obtain feedback on teaching methods, learning experiences, competence of the instructor.

The course instructor will have an assigned faculty mentor who will attend the course and observe teaching styles and teaching methods. The course instructor will meet with the faculty mentor weekly to obtain feedback, advice, and suggestions for teaching styles and teaching methods. The faculty mentor will also complete a midterm and final evaluation on the course instructor to assess her teaching competence and provide feedback and suggestions.
Appendix A

Faculty Needs Assessment Survey

The purpose of this survey is to gain valuable faculty input pertaining to a course development Capstone project. The course under development will facilitate some form of interdisciplinary collaboration between OTD and mechanical engineering undergraduate students at UT. In this course, students will work together to design and build assistive equipment for members of the local Toledo community.

The initial design of this course is based on the Capstone course already established in the Mechanical, Industrial, and Manufacturing Engineering (MIME) Department at UT where engineering students have the option of working with clients from the Ability Center to design a desired piece of assistive equipment, with funding made possible through a grant from the National Science Foundation.

It is the ultimate hope to integrate collaboration with OTD students to optimize equipment design, safety, usability, and user satisfaction, while creating interdisciplinary learning opportunities that will benefit students and faculty from both disciplines.

* 

1. Do you think the OTD curriculum at UT could benefit from this type of course? Please comment on your response.

☐ Do you think the OTD curriculum at UT could benefit from this type of course? Please comment on your response. Yes
☐ No
☐ Unsure

Please comment on your response below.
2. Do you think it is feasible and realistic to incorporate this type of course into the existing OTD curriculum at UT? Please comment on your response.

☐ Yes
☐ No
☐ Unsure

Please comment on your response below.

3. What would be the best structure for this type of course (considering practicality, encouraging student participation, etc.)? Please comment on your response.

☐ Elective course(s)
☐ Certificate program
☐ Experiential component of an already-existing course
☐ Other (please specify below)

Please comment on your response below.
4. Would OTD students benefit from such a course in the OTD curriculum? Please comment on your response.

☐ Yes
☐ No
☐ Unsure

Please comment on your response below.

5. Do you think students would be interested in participating in such a course? Please comment on your response.

☐ Yes
☐ No
☐ Unsure

Please comment on your response below.

6. Can you suggest any relevant resources or contacts that might contribute to the development of this course?
Thank you for your participation in this survey! Your contributions are very valuable to the development of this Capstone project!
Appendix B

OTD Student Needs Assessment Survey

I am seeking out the very valuable student perspective for my Capstone project. My Capstone entails developing an interdisciplinary course that will facilitate some form of collaboration between OTD and mechanical engineering undergraduate students at UT. In the course, students will work together to design and build assistive equipment for members of our local Toledo community.

The initial structure of this course is based on the Capstone course already in place in the Mechanical, Industrial, and Manufacturing Engineering (MIME) Department here at UT. In their respective Capstone course, students have the option to design and construct a desirable piece of assistive equipment for clients at the Ability Center, with funding made possible by a grant from the National Science Foundation.

It is the ultimate goal to integrate collaboration with OTD students to optimize equipment design, safety, usability, and user satisfaction, while creating new interdisciplinary learning opportunities that will benefit students and faculty from both disciplines.

1. Do you think the OTD curriculum at UT could benefit from this type of course? Please comment on your response.

☐ Do you think the OTD curriculum at UT could benefit from this type of course? Please comment on your response.  Yes
☐ No
☐ Unsure

Please comment on your response below.

2. What do you think is the best structure for this type of course? Please comment on your response.

☐ What do you think is the best structure for this type of course? Please comment on
your response. Elective course(s)
☐ Certificate program
☐ Experiential/lab component of an already-existing course
☐ Other (please specify)

Please comment on your response below.

3. What is your current level of interest in working with Mechanical Engineering students to build assistive equipment?
☐ What is your current level of interest in working with Mechanical Engineering students to build assistive equipment? Very interested
☐ Somewhat interested
☐ Neutral
☐ Somewhat disinterested
☐ Very disinterested

4. How interested would you be in participating even if this course were not mandatory (i.e. an optional certificate program or elective course)? Please elaborate on your response below.
☐ How interested would you be in participating even if this course were not mandatory (i.e. an optional certificate program or elective course)? Please elaborate on your response below. Very interested
☐ Somewhat interested
☐ Neutral
☐ Somewhat disinterested
☐ Very disinterested
5. What do you think could increase student participation if this course was not mandatory (i.e. an optional certificate program or elective course)?

Please comment on your response below.

6. Would you be willing to participate in an optional elective course or certificate program of this topic area if it was 1 semester in duration? Please comment on your response below.

☐ Yes
☐ No
☐ Unsure

Please comment on your response below.
7. Would you be willing to participate in an optional elective course or certificate program of this topic area if it was 2 semesters in duration? Please comment on your response below.

- [ ] Yes
- [ ] No
- [ ] Unsure

Please comment on your response below.

Thank you for your time and thought in completing this survey! Your contributions are very valuable to the development of this Capstone project!
Appendix C

Interdisciplinary Education Perception Scale

1. **Individuals in my profession are well-trained.**

<table>
<thead>
<tr>
<th>Pre</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>Strongly Agree</td>
</tr>
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2. **Individuals in my profession are able to work closely with individuals in other professions.**

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3. **Individuals in my professional demonstrate a great deal of autonomy.**

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4. **Individuals in other professions respect the work done in my profession.**

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5. **Individuals in my profession are very positive about their goals and objectives.**

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6. **Individuals in my profession need to cooperate with other professions.**

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7. **Individuals in my profession are very positive about their contributions and accomplishments.**

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8. **Individuals in my profession must depend upon the work of people in other professions.**

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9. **Individuals in other professions think highly of my profession.**

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10. **Individuals in my profession trust each other’s professional judgment.**

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11. **Individuals in my profession have a higher status than individuals in other professions.**

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12. **Individuals in my profession make every effort to understand the capabilities and contributions of other professions.**

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13. Individuals in my profession are extremely competent.

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14. Individuals in my profession are willing to share information and resources with other professionals.

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15. Individuals in my profession have good relations with people in other professions.

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16. *Individuals in my profession think highly of other related professions.*

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17. *Individuals in my profession work well with each other.*

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18. *Individuals in other professions often seek the advice of people in my profession.*

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Adapted from:

Annotated Bibliography

Elizabeth A. DeRemer

Department of Rehabilitation Sciences

Occupational Therapy Doctorate Program

The University of Toledo

May 2012
Annotated Bibliography

General Resources for Teaching and Learning


Abstract:

An abstract was not included for this source.

Summary and Significance:

Chapter three of Health Professional as Educator describes various theories of learning, including main terms and characteristics of each theory, with practical application to clinical settings and academic settings with students of health care professions. The psychological theories included in this chapter are behaviorist learning, cognitive learning, social learning, psychodynamic learning, and humanistic learning. There is a section with focus on neuropsychology and learning and how findings in this area of science relate to and/or support the various learning theories. In a following section, the various theories and compared against one another. Finally, suggestions are provided for making learning permanent.

This chapter is very relevant to the current course development. It provides the reader with a comprehensive overview of learning well-known learning theories in education and how they can relate to health care practice and education in health care. The information in this chapter can spur further investigation into one or more of the theories presented. Understanding these different perspectives on learning prompts the reader to think about how he or she learns best and become more aware of the learning characteristics and preferred styles of his or her students. These are important considerations that could might considered while teaching as part
of the practicum hours of this capstone as well as for the actual development a new academic course.


Abstract:

An abstract was not included for this source.

Summary and Significance:

Behavioral objectives are the topic of chapter 10 in *Health Professional as Educator*. Introduced are the terms educational objective, instructional objective, behavioral objective, and goals. The differences between objectives and goals are discussed to be that objectives are broader, long-term, multi-dimensional, and describe final outcomes. In contrast, goals are more specific, short-term, and uni-dimensional. Furthermore, educational objectives are defined as the intended outcomes of an educational process. Instructional objectives are those that describe the activities and resources that will be used to facilitate effective learning. Behavioral, or learning, objectives define what the learner specifically will be able to do as a result of the educational process; these are more centered on the learner.

To help with writing objectives, the acronyms “ABCD” and “SMART” are suggested to help remember all of the components of the goal or objective. “ABCD” stands for the audience, behavior, condition, and degree elements of objective writing. “SMART” stands for objectives that are specific, measureable, achievable, realistic, and timely. Finally, the three domains of objectives, namely the cognitive, affective, and psychomotor domains, are presented along with the type of objectives and teaching methods that correspond to each domain.
This chapter will be very valuable to reference when writing goals and objectives for the current course development. This will ensure that goals and objectives are written fully and address all of the necessary components. It will also help determine the most relevant teaching methods that might be used to address goals and objectives in the three different domain areas to facilitate achievement of those goals and objectives.


**Abstract:**

An abstract was not included for this source.

**Summary and Significance:**

As the title suggests, chapter six in *Health Professional as Educator* addresses on compliance, motivation, and health behaviors as they pertain to learning. The sections on compliance and health behaviors have more of a focus on patient education, so only the section on motivation was regarded at this time. Different categories of motivational attributes are described in the areas of personal, environmental, and relationship systems. Motivational axioms are described and are as follows: 1) state of optimal anxiety; 2) learner readiness; 3) realistic goal setting; 4) learner satisfaction/success, and 5) uncertainty-reducing or –maintaining dialogue. A variety of strategies are provided for facilitating one’s motivation for learning. These include, but are not limited to, using clear communications, setting clear expectations, manipulating the environment, providing positive verbal feedback, and creating opportunities for success. In addition, the role of the educator in promoting learners’ motivation is discussed, as well as the concept of the educator being seen as a barrier or facilitator of motivation.
This information will be helpful in creating learning activities and implementing strategies in the teaching component of the practicum of the current capstone project. This information will similarly apply to the actual course development so that the learning environment and course activities facilitate a sense of motivation for learning among students. It will also be important for the instructor of this course to use instructional strategies and create a positive environment so as to be seen as a promoter of motivation and not as a barrier to it.


Abstract:

An abstract was not included for this source.

Summary and Significance:

Chapter four of *Health Professional as Educator* provides an overview of the multitude of elements that can potentially inhibit or promote one’s learning. These are broken into the three categories of needs of the learner, readiness to learn, and preferred learning styles. The text also describes the educator’s role in assessing these three areas and how to subsequently facilitate learning.

Learning needs are described as what the learner needs and wants to learn. Methods recommended to assess these needs are informal conversations, structured interviews, focus groups, questionnaires, tests, and observation. A four-step appraisal method suggests to first define the target population, analyze the needs of the learner and organization, examine the learner’s perceived needs compared with actual needs, and finally, use data to prioritize those needs.
Readiness to learn is determined when the learner shows an interest in learning the necessary content through willingness, participation, and receptivity. There are many types of readiness, namely the areas of physical, emotional, experiential, knowledge readiness.

Finally, preferred learning styles are those that describe how a learner approaches learning and their most effective way for perceiving, processing, and storing information. This takes into account cognitive, affective, and physiological factors for how learners interact with the learning environment around them. Several formal assessment tools for assessing learning styles are described, as well as tips for their selection and interpretation. Finally, general tips for facilitating learning through different preferred styles, helping learners expand their affinities towards certain learning styles, and combining knowledge of preferred styles with the factors of learner needs and readiness to learn.

This chapter provides a wealth of information that is beneficial in teaching in general. Understanding these three main determinants of learning will help an educator better understand the learners in his or her classroom and facilitate the more effective learning experiences for those individuals. This is relevant to the development of the current course in helping to define the target population of the course, the needs and characteristics of those potential students, and then creating learning experiences to best meet those needs and characteristics. This also applies to the teaching aspect of the practicum component of the current capstone.


**Abstract:**

An abstract was not included for this source.
Summary and Significance:

Chapter five of *Health Professional as Educator* provides an overview of the different stages of development as it relates to learning throughout the lifespan. The terms pedagogy, andragogy, and gerogogy are introduced. Concepts relating to andragogy were of the reader’s main focus, since this pertains to the methods and techniques used to teach adults, who are the target audience of the course under development. Characteristics of andragogy are included being centered on the learner, having a horizontal relationship between the learner and teacher, and learners who want to know the benefit of what they are to learn and how it applies to their lives.

Developmental characteristics for different age groups are described, although it is stressed that the developmental stages are sequential but not necessarily determined by one’s age. The “young adult” and “middle-aged adult” groups were the reader’s main focus, since these age groups represent those who will primarily be enrolled in the current course. The text describes characteristics common to individuals in these age groups and how these factors can inhibit or promote one’s learning.

This is very valuable information to review when developing a course. It is helpful to gain a deeper understanding of the characteristics typical of the students who could be potentially enrolled in the current course. It will be important to then consider these characteristics when formulating learning experiences to best facilitate learning for this particular audience. These concepts can also be applied in the current teaching setting where much of the practicum component of this capstone takes place.

education. In M. Gartside (Ed.), *Health professional as educator* (pp. 541-573).

Sudbury, MA: Jones & Bartlett Learning, LLC.

Abstract:

An abstract was not included for this source.

Summary and Significance:

Methods of evaluation are the focus of chapter 14 in *Health Professional as Educator*.

Five forms of evaluation are presented. Process, or formative evaluation, is carried out at some point during the course, commonly at midterm. It is used to anticipate and/or prevent issues in achieving objectives and helps to identify problems as they occur so that the course of action might be changed. Content evaluation determines if the learners have learned what was intended for specific learning experiences. Outcome, or summative, evaluation pertains to the long-term outcomes of one’s teaching efforts and summarize the broader results of learning. Impact evaluation measures the worth of learning outcomes and is defined as the effects that the education has had on the community. Finally, program evaluation is used to determine broad goals and evaluates the process, content, outcomes, and impacts of the learning. It takes into consideration the input from all of those involved, including the learners, instructors, and representatives of the institution and/or community.

This chapter will be relevant to reference when considering the necessary aspect of course and teaching evaluation in course development. This chapter will help determine which forms of evaluation should be incorporated into the course under development, what elements these evaluations should include, and how to use the data gathered from such evaluations. These evaluation types and methods could also be utilized to evaluate the teaching and learning
experiences of students currently enrolled in the course taught as part of the practicum component of this capstone.


Abstract:

An abstract was not included for this source.

Summary and Significance:

Various instructional methods are presented in chapter 11 of *Health Professional as Educator*, including lecture, group discussion, demonstration/return-demonstration, gaming, simulation, role playing, role modeling, and self-instruction. For each method, the authors describe the best circumstances for which to use that method, key elements, the role of the teacher, challenges of use, and necessary resources. There are sections on factors to consider when deciding on which methods to incorporate, how to effectively evaluate one’s teaching methods, and general tips for increasing one’s effectiveness in teaching.

This is another chapter with a wealth of information that is valuable for course development. This will be an important chapter to reference when considering the development of specific learning activities and which methods might be employed to facilitate the most effective learning for the interprofessional course under development, as well as in the current teaching experiences as part of this student’s practicum experience.

Abstract:

An abstract was not included for this source.

Summary and Significance:

As the title implies, chapter one of *Health Professional as Educator* provides a history and summary of the health professional’s particular role as an educator. It is described that educating patients has been a role of health care professionals from the earliest known healers (i.e. physicians, herbalists, midwives, shamans), even though the term “educator” was not specifically used. The need for patient education increased in the mid-1800s with the emergence of various health professions, spread of disease, technological advances, and growing interest in the well-being of mothers and children. The first references in literature in patient education did not occur until the 1950s, and emphasis on this topic grew through the 1970s. Educational standards were introduced by the Joint Commission in the early 1990s mandating that nursing students be better prepared for their roles as patient educators and more recently, these standards have expanded to require more of an interdisciplinary approach to patient education.

Patient education is connected to education in the academic setting by discussion of the similarities between the health process models and education process models in terms of assessment, planning, implementation, and evaluation. Various shifts in learning models are also discussed. For example, a prominent shift occurred in the 1990s away from teacher-based focus to one more focused on the learner’s needs, abilities, preferred learning styles. The teacher in this newer paradigm is no longer seen as an information transmitter, but as a facilitator, coordinator, and process designer. Finally, barriers to teaching and barriers to learning are identified and related to one another.
This initial chapter is relevant to the course under development because it connects the role of educator in the clinical and academic settings. The historical view of the role of educator sets the stage to better understand this role and how it has evolved. The basic overview of the current teaching-learning paradigm, including barriers pertaining to both teaching and learning, helps the reader to understand the various facets and demands required of this role and basic teaching-learning learning.

This is important information to apply to different aspects of the current course. For example, the course will be pursued by students of health professions and possibly practitioners, so these basic ideas of teaching and learning can be applied to these students. In addition, a current practitioner could potentially teach the course in the future, so it is important for him or her to be prepared to not only effectively teach the students in the course, but also help the students teach and learn from each other, as well as to teach the students to in turn teach the client for which they will design their course project.


Abstract:

“The Chicago Handbook for Teachers is an extraordinarily helpful guide for all those who face the challenge of putting together material for a course and then making it work. Representing teachers at all stages of their careers, the authors offer practical advice for almost any situation a new teacher might face, from preparing a syllabus to managing classroom dynamics. Beginning with a nuts-and-bolts plan for designing a course, the handbook also explains how to lead a discussion, evaluate your own teaching, deliver an effective lecture,
supervise students’ writing and research, create a grade exams, and more. Other sections address the less straightforward aspects of teaching, such as dealing with diversity issues and knowing where to draw the line in relationships with students. Particularly timely is an up-to-date discussion of when and how best to incorporate the Internet and other electronic resources into your teaching.

Indispensable for graduate students and new teachers, *The Chicago Handbook for Teachers* is also a useful refresher for experienced professionals.”

**Summary and Significance:**

This is a very practical guide for new teachers, especially graduate students. The insight gained from this book is especially applicable to the teaching experience which is part of the practicum experience of this capstone; however, it also provides implications to be considered for the actual course development. Particularly useful topics pertain to preparing for the first day of class, evaluating your teaching styles, facilitating classroom discussion, preparing and delivering effective lectures, creating and grading assignments and tests, handling diversity, and how to professionally handle conflicts involving one’s students and other faculty members.

There is a common theme throughout this book of how to realistically formulate and deliver an effective course within the constraints of available resources, limited time, and other demands of student life and adulthood. There is also advice on incorporating various media and technologies into the classroom, but this information seems a bit outdated; one might seek more up-to-date and useful information pertaining to this topic elsewhere.


**Abstract:**
An abstract was not included for this source.

**Summary and Significance:**

This chapter is devoted to the topic of group theory, development, and process. There are several models of group theory discussed, with information summarized in various charts making it easy to compare and contrast the different models. There are a variety of different sample worksheets that could be used to facilitate students’ understanding of this content. Also provided are sample evaluation forms that could be used in a group setting to assess perspectives of group members pertaining to group roles, norms, and development.

It is important for the course instructor and team faculty mentors to be knowledgeable of these models in order to understand how groups form, develop, and function. This is essential in facilitating successful groups. This content will also be beneficial for students of the IPE course so that they are equipped with skills and strategies for achieve maturity in their own teams in the course. They will also be able to take this knowledge and skill into the workplace in the future and be more likely to facilitate successful interdisciplinary teamwork as professionals.


**Abstract:**

An abstract was not included for this source.

**Summary and Significance:**

In his book, John Dewey argues for the need for renewal of public education and a universal education. He presents that education is a “necessity of life” and serves a social function. Aims of education are discussed, as well as the roles of areas such as vocation, science, history, geography, and discipline in education. This text will help establish a personal philosophy of education, which is necessary to first identify in order to be an effective teacher.

Abstract:

An abstract was not included for this source.

Summary and Significance:

This book draws on the lives of prominent figures in history to present seven laws of learning. By telling about life experiences of world leaders such as Ghandi, Nelson Mandela, Eva Peron, William Wilberforce, George W. Bush, and Winston Churchill, the authors connect main aspects about these individuals' life success with their great teaching moments. These stories are used to bring to life their seven laws of learning. These laws are as follows: 1) we are all born to learn; 2) you never know when learning will occur; 3) you learn by connecting; 4) we all learn differently; 5) connections come through storytelling; 6) learning is both an emotional and intellectual experience; and 7) learning can change lives.

Instead of presenting lists of practical tips for surviving teaching in classroom setting, the authors of this book describe teaching from a different perspective. This view is more global and presumes that learning can occur anywhere. While some of traditional teaching-learning theories are discussed, these theories are applied in a larger life scale beyond the classroom.

This is quite a different perspective on teaching-learning than has been encountered thus far in the literature search for the current course development. Reading this book is relevant to the current course development because it shows the larger impacts of the teaching-learning relationship and how what is taught in the classroom may be carried beyond the walls of the school and into the real world. It is very motivational and inspiring for the development of future lectures for the course being taught as part of the current practicum experience of this capstone.
This also has very important implications for the actual course development, since the course is one that will have a strong element of community involvement and will require learning and problem solving outside of a traditional didactic classroom setting. This book also shows that effective teaching leads to effective leadership, which is important in any teaching-learning setting.


**Abstract:**

“The seemingly subtle difference between asking ‘What should we teach?’ and ‘How will students be different as a result?’ can lead to changes that permeate all aspects of an institution. Decisions about classroom content and methods, as well as larger curricular issues, depend on a clear view of intended outcomes—what we want students to know and be able to do with what they know. It is ironic that college catalogues include assurances that graduates will be prepared to participate in society as contributing citizens, make informed decisions, and take on leadership roles, and yet the abilities necessary for these contributions are not explicitly taught. In contrast, the programs set forth in this volume of “New Directions for Teaching and Learning” assist students to integrate what they know with what they can do.”

**Summary and Significance:**

This book provides beneficial insight into the role of active learning in the college academic setting. Principles are given about how students learn. It is then discussed how these principles about knowledge and experience can be effectively integrated and the need to do so. There are also examples of actual programs utilizing these principles. All of the learning
principles and curriculum examples given focus on the adult learner, which is appropriate for the student population targeted for the current course under development.


Abstract:

An abstract was not included for this source.

Summary and Significance:

A wide range of teaching models are discussed in this book. The models are grouped into four “families” of models, namely the information-processing family, social family, personal family, behavioral systems family. Models are present with case scenarios, basic concepts of the model, and rationale. Learning about these various models of teaching will help in the selection of teaching methods and the subsequent development of learning experiences. Choosing appropriate methods and learning opportunities is necessary in order to create an effective college-level course and meet the needs of the target student population.


Abstract:

An abstract was not included for this source.

Summary and Significance:

This resource provides an overview of course development. An “instructional design plan” is created with the aim of answering three main questions. These questions are: 1) “What must be learned (objectives)?” 2) “What procedures and resources will work best to reach the desired learning levels (activities and resources)?” and 3) “How will we know when the required
learning has taken place (evaluation)?” The plan consists of eight parts, starting with establishing goals, topics, and purposes, identifying learner characteristics, creating learning objectives, establishing subject content, pre-assessment, indentifying teaching/learning activities and resources, finding support services, and evaluation. Although this book is rather outdated, the core concepts are still very applicable to today’s current college curriculum.


Abstract:

An abstract was not included for this source.

Summary and Significance:

This is a good targeted at new faculty or graduate teaching assistants teaching at the college level for the first time. The author gives a wealth of practical advice for surviving the first year of teaching, including preparing a syllabus, use of technology and course websites, tips for leading a discussion, choosing different types of learning activities and assignments and what kinds of learners benefit most from each type, cheating and plagiarism, office politics, and balancing work and personal life. He also includes a chapter devoted to the learning theories of Jean Piaget and William Perry. Combining different theoretical approaches with his own personal experiences, Lang gives very realistic and thoughtful advice for first-time college instructors.

This book helps the reader to realize the demands common to teaching at the college level, some of which may be unexpected. The reader will also gain insightful tips on how to handle and balance these various demands. Having an understanding of and appreciation for the entire role of a faculty member both inside and outside of the classroom will contribute to this
capstone project by contributing to the success of the current practicum teaching experience, as well as allowing this student to create a course that is realistic in terms of the demands that will be required of the faculty involved in the course delivery.


**Abstract:**

An abstract was not included for this source.

**Summary and Significance:**

This is a greatly beneficial book to review in studying curriculum design. There are 5 main parts which together provide a broad overview of the study of curriculum. Part I addresses concepts of curriculum, such as humanism, social reconstructionism, technology, and academic subject. Part II examines the technical skills of curricular design, helping one to decide upon what should be taught and how to teach it. Part III views curriculum as seen by policy makers and institutional leaders. In part IV, broader curricular trends are discussed. Finally, Part V focuses on curriculum as a field of study, including historical perspective. Reviewing the textbook will provide a comprehensive understanding of curriculum design at the college level.


**Abstract:**

Teaching represents the moment at which graduate students reverse roles and take on the responsibility of educating others. Although having the opportunity to teach can greatly enhance the graduate student experience, for many graduate students a teaching assignment can entail having to find a balance between the competing demands of coursework, research, teaching, and
their personal lives. This article begins with a description of some of the responsibilities that face graduate students who teach. The article then provides a variety of specific strategies that can help graduate students teach more effectively and efficiently, and concludes with brief thoughts on how to address issues that might arise with respect to teaching.

**Summary and Significance:**

The author of this article suggests some very practical teaching tips that are particularly relevant for graduate students serving as teaching/graduate assistants. While the author represents the Department of Geography at his respective institution, his tips appear relevant for graduate students teaching nearly any discipline. The author addresses how to balance all of the demands placed one might encounter in such a situation, considering the various roles and responsibilities of a graduate student, researcher, teacher, family member and adult. He addresses the relatively lack of teaching preparation for most graduate students, unforeseen teaching demands and responsibilities (i.e. phone calls, emails, lecture preparation, grading. He stresses the benefits of networking and how to locate teaching resources and lecture material. He also provides tips for simplifying and streamlining one’s role as a graduate teaching assistant. This is all very beneficial information to consider as a beginning instructor at the college level. It is also relevant to developing a course that could involve the assistance of graduate students.

**Tyler, R. (1949).** *Basic principles of curriculum and instruction.* Chicago, IL: The University of Chicago Press.

**Abstract:**

An abstract was not included for this source.

**Summary and Significance:**
This is a classic resource in curriculum design and instructional principles. Four fundamental questions are identified as the basis of any curriculum design or plan of instruction. They address the educational purposes the school wishes to seek, identifying educational experiences to meet those purposes, effective organization of the learning experiences, and evaluation of the program to ensure purposes are attained. No one set of methods is suggested as being best in answering these questions; instead, several examples are given for how they can be answered. Review of this text will allow for a broad understanding of curriculum design and instructional planning, with the added awareness of a multitude of strategies that could potentially be utilized to create an effective course.


Abstract:

“College teaching and learning are at important crossroads. New clientele, new possibilities, and new obstacles have focused new and serious attention on the nature and success of postsecondary education. This sourcebook provides a timely look at the prospects for the future of college teaching and learning. Former editors of “New Directions for Teaching and Learning” volumes contribute chapters in a number of the most important areas of college curriculum and pedagogy. The volume offers provocative and practical ideas about the undergraduate curriculum, teaching strategies, the evaluation of teaching, student learning, and faculty development.”

Summary and Significance:
This book provides brief looks into various areas of the history of college education, namely is it pertains to the use of technology, liberalism, faculty development, and the evaluation of college teaching. To create an interdisciplinary course among undergraduate and graduate students, it is important to first understand how college education has evolved and what predictions are made for the future. Given that this book is somewhat outdated, future predictions for college education given should be read carefully. However, the core ideas of this resource will be beneficial to review.

Interprofessional Education


Abstract:

An abstract was not included for this source.

Summary and Significance:

This document provides an overview of the “interrelated constructs that define and guide occupational therapy practice” (p. 625). It provides a summary of the occupational therapy domain, as well as describing specific core terms and concepts of the field. The OT process is then described, including the elements of evaluation, intervention, and outcomes. Clients are defined at the individual, organizational, and population levels. Examples are given throughout the document demonstrating occupational therapy’s role throughout the therapy process relating to each of these client types.

This resource could be beneficial to reference in developing common language between occupational therapy and mechanical engineering students involved in the IPE course under
development which will be necessary for successful interprofessional collaboration. It could also be used to explain the profession of occupational therapy to the mechanical engineering students in the course. Having a strong understanding of each profession will help the students more deeply understand their respective roles in the course.


**Abstract:**

“In the interdisciplinary course, Aging to Infancy: A Life Course Retrospective, the Institute of Medicine’s recommendations for education were embraced through the role modeling provided by faculty both across and between disciplines. Over the five years since its creation, the course has introduced students to aging in a positive manner, establishing the foundation for higher level courses within each program’s curriculum. The course also introduces students to the interdisciplinary healthcare team and reinforces the need for practitioners who value the interdisciplinary approach and expect it in their place of work. These are best practices for an interdisciplinary course.”

**Summary and Significance:**

This article provides a case example of an interdisciplinary college-level course that has been implemented relatively recently. It was modeled after the Institute of Medicine’s education recommendations for a more interdisciplinary model. This course uses as highly integrative approach by incorporating faculty from different yet related health professions who were all present at each class session. The four faculty members represented dietetics, nursing, social work, and occupational therapy. Examples of student feedback are provided. While content of
the current course under development will be different than that of the course in this article, it serves as a concrete example of an interdisciplinary course from which to draw ideas.


**Abstract:**

“Transdisciplinary health care continues to be at the forefront of patient treatment in the medical arena, in part due to escalating health care costs, an increasing aging population, and the development of multiple chronic diseases. Gaining knowledge, experience, and principles associated with transdisciplinary teamwork to successfully prepare for modern-day practice is therefore essential for individuals of various health care professions. This report describes an assignment developed and implemented to facilitate professional interaction between graduate physical therapy, nutrition, and nursing students. The objectives of this assignment were to determine through student evaluation the effects of a transdisciplinary experience on students’ understanding of the role of another discipline and students’ communication skills across disciplines. When evaluating the assignment, students most often remarked that they developed a greater understanding of the roles of the included disciplines and reported a significant increase in communication skills. However, some students did not concur that this assignment was effective due to the scheduling conflicts and lack of teamwork that can occur during a collaborative project. The students’ reports of their experiences in completing the assignment provide valuable insights for implementing and/or updating a preparatory transdisciplinary education component in other settings. Additional research can focus on the challenges faced by
the majority of students venturing into actual health care or “real world” settings for comparative studies.”

**Summary and Significance:**

This study analyzes one example of a transdisciplinary assignment project among graduate students of the physical therapy, nutrition, and nursing fields. Participants worked together on various case scenarios to formulate the most effective treatment plan for each case study. Students were required to provide input specifically from their respective professions along with evidence to support that input. Finally, students had the task of discussing the role of each discipline and identify new knowledge learned through the collaboration assignment. Results presented in this article show both positive and negative student feedback, benefits, and outcomes of participation. There is also an example of a 5 question survey used to evaluate students’ perceptions of the assignment.

The transdisciplinary assignment example examined in this article is somewhat similar to the central assignment of the course under development in that specific case studies are utilized to create a realistic treatment plan for a client; however, in this example, the case studies are hypothetical, whereas in the course under development there will be actual clients. The results found through examination of this course can be considered when developing the current course, with efforts made to try to overcome the course barriers identified in this study. In addition, the evaluation survey used to gather student perceptions in this study might be referenced when forming the various evaluation methods for the current course.


Abstract:

An abstract was not included for this source.

Summary and Significance:

In November, 2011, the Collaborating Across Borders (CAB) 3rd Biennial Interprofessional Educational Conference was held in Tucson, Arizona. CAB is a joint conference between educators, researchers, policy makers, health care professionals and students from both Canada and the United States meet with the goal of promoting effective interprofessional education, research, and practice. This document compiles the abstracts of all of the papers and presentations presented at this conference.

This document will help the IPE facet of the current course development. By reviewing this document, the reader can gain a broad view of the current IPE literature and hot topics in this area, providing implications that might be considered throughout the development of the current course. Application of material found in this abstract book is somewhat limited due to the fact that many of the included abstracts are for presentations, discussions, or papers with no formal publication. Without actually attending the conference, it is difficult to obtain more depth of knowledge on these specific presentations and papers. Still, many of the abstract provide basic and general theoretical frameworks, terminology, concepts, and tips that might be utilized in the current course.

Abstract:

“An evidence-based interprofessional education (IPE) involving first year undergraduate students studying medicine, nursing, physiotherapy and occupational therapy was piloted at the University of Liverpool. Campbell’s phased approach and Complexity Theory guided development of the intervention and its evaluation. The intervention included a staff-training programme, e-learning materials, and interprofessional team working skills workshops. A multi method study design was used to evaluate outcomes and the process by which the outcomes had transpired. The first year cohort of students (n=442) was invited to attend the pilots. Fifty-four per cent (n= 237) opted to attend. Findings showed that the intervention promoted theoretical learning about team working. It enabled the students to learn with and from each other ($p < 0.001$), it significantly raised awareness about collaborative practice ($p <0.05$), and its link to improving the effectiveness of care delivery ($p < 0.01$). The qualitative data showed that is served to increase students’ confidence in their own professional identity and helped them to value difference making them better prepared for clinical placement. The findings support the need to start IPE early in students’ training before professional doctrines have been built into their learning. As a result of the findings, the intervention has become compulsory for students to attend and the project has evolved to include trained service users/carers as co-facilitators of the workshops. It is also working on strengthening e-learning by integrating the general materials into the curricula of all courses. Alongside this, strategies are being explored for interprofessional learning in practice.”

Summary and Significance:

This article is useful to the current course development in terms of methods evaluation and student learning outcomes for an interprofessional course. The authors utilized the Readiness
for Interprofessional Learning Questionnaire by Parsell and Bligh, 1999. This is a possible tool that might be utilized in the current course to assess students in terms of perceptions of the benefits and outcomes of interprofessional learning. As done in this study, students could be assessed at the beginning of the course and again at the end to determine changes in perceptions. The original article for this questionnaire should be sought to obtain the measurement tool itself and obtain further information about its development and use.

The results of this study showed eight main themes of qualitative student feedback: motives for participation, timing of the course, gains from attending the course, links to other courses, group dynamics, facilitation, e-learning materials, and criticisms. This student feedback could be considered when developing the current course to help ensure it will appeal to the student population and meet their needs. The feedback obtained in this study also alludes to the importance of obtaining similar types of feedback from students involved in the course under development. Outcome measures are essential to obtain this data. Both quantitative and qualitative measures should be incorporated into the course to get the most comprehensive picture of student perceptions and feedback.


Abstract:

An abstract was not included for this source.

Summary and Significance:

This resource focuses on the development of an interdisciplinary course. First, an idea must be had for the purpose of the course. This idea is then expanded upon through collaboration
with faculty from other disciplines. How to determine learning outcomes is discussed next. The importance of using Bloom’s is stressed, as writing objectives using this tool will elicit specific, measureable goals. Next, the faculty members from the disciplines involved must again collaborate to define the scope, depth, and sequence of the course. Finally, the organizational structure is determined, such as topics to be covered each day and week, assignments, and who will teach what content. This resource provides a brief overview of interdisciplinary course development with concrete suggestions to consider. Practical implications for working on an interdisciplinary academic team are also addressed, which are beneficial to be aware of when developing a new course.


Abstract:

“In an effort to prepare health care professionals for the team-based work environment that exists in health care delivery systems today, some nursing faculty may consider collaborative, team-taught courses that integrate faculty and students from various disciplines. To assist nursing faculty in making an informed decision about integrated curriculum development and course implementation, multidisciplinary, interdisciplinary, and transdisciplinary educational teams are defined. Examples are offered that reflect these three integrated educational team models. Finally, the benefits and potential problem areas that result from team initiatives are briefly reviewed.”

Summary and Significance:

This article pertains more specifically to nursing education, although the models, barriers, and potential problems could be applied to the current course development as long as measures
are taken to ensure that the course meets the needs of the UT and the OT and MIME departments. The terms multidisciplinary, interdisciplinary, and transdisciplinary are defined including key elements and characteristics of each type of team. An example of each type of model is explained that pertain to nursing education at The University of New England’s College of Health Professions. Again, although these examples are based on the nursing profession, the broader elements and implications of each might be applied to the current course development.


**Abstract:**

“After presenting a theory of team development, we propose that the informal role structure of a team is dependent upon the degree of anomie in the team culture, and we provide measures of anomie and informal roles that can be used in field settings. Then we test hypotheses on a national sample of 111 interdisciplinary health care teams in geriatrics in US Veterans Affairs medical centers. We find evidence that as teams develop from early to later stages, the interpersonal behavior of members becomes less differentiated on three dimensions: prominence, sociability, and task-orientation. In addition, we find that images of each member come into clearer focus, as evidenced by reduced variation in how each member is seen by other team members. Finally, we find that regardless of stage of team development, the more education the team members have, the more prominent and task-oriented they are. In general, physicians score highest in prominence and task-orientation, but relatively low in sociability.”
Summary and Significance:

The authors of this article propose a theory of group development based on influential work of previous theorists. The model described in this article could be quite useful in teaching students of the course under development about group theory and group development. The model is described in enough detail such that it is possible to potentially present it as a main model in the course in this content area. Other models of group theory might also be presented in the course and compared and contrasted against this model. Students could be asked to assess their own teams throughout the course and determine which stages of development they experience. They might then reflect at the end of the course on what strategies were successful for their teams and what could have been improved upon.


Abstract:

Background and review context: Evidence to support the proposition that learning together will help practitioners and agencies work better together remains limited and thinly spread. This review identified, collated, analysed and synthesised the best available contemporary evidence from 21 of the strongest evaluations of IPE to inform the above proposition. In this way we sought to help shape future interprofessional education and maximize the potential for interprofessional learning to contribute to collaborative practice and better care.

Objectives of the review:

. To identify and review the strongest evaluations of IPE.
To classify the outcomes of IPE and note the influence of context on particular outcomes.

To develop a narrative about the mechanisms that underpin and inform positive and negative outcomes of IPE.

**Search strategy:** Bibliographic database searches as follows: Medline 1966–2003, CINAHL 1982–2001, BEI 1964–2001, ASSIA 1990–2003 which produced 10,495 abstracts. Subsequently, 884 full papers were obtained and scrutinized. In addition, hand searching (2003–2005 issues) of 21 journals known to have published two or more higher quality studies from a previous review.

**Topic definition and inclusion criteria:** Peer-reviewed papers and reports included in the review had to be formal educational initiatives attended by at least two of the many professional groups from health and social care, with the objective of improving care; and learning with, from and about each other.

**Data collection, analysis and synthesis:** Standard systematic review procedures were applied for sifting abstracts, scrutinizing full papers and abstracting data. Two members of the team checked each abstract to decide whether the full paper should be read. A third member was consulted over any discrepancies. Similarly, each full paper was read by at least two members of the team and agreement sought before passing it to one member of the team (SR) for data abstraction. Other members of the team checked 10% of the abstraction records. Coding into a Statistical Package for Social Scientists (SPSS) data base led to collection of different outcome measures used in the primary studies via the common metric of an adapted Kirkpatrick’s four-level model of educational outcomes. Additionally, a narrative synthesis was built after analysis.
of primary data with the 3-P model (presage-process-product) of education development and delivery.

**Headline results:** Government calls for enhanced collaboration amongst practitioners frequently leads to IPE that is then developed and delivered by educators, practitioners or service managers. Staff development is a key influence on the effectiveness of IPE for learners who all have unique values about themselves and others. Authenticity and customization of IPE are important mechanisms for positive outcomes of IPE. Interprofessional education is generally well received, enabling knowledge and skills necessary for collaborative working to be learnt; it is less able to positively influence attitudes and perceptions towards others in the service delivery team. In the context of quality improvement initiatives interprofessional education is frequently used as a mechanism to enhance the development of practice and improvement of services.

**Summary and Significance:**

This resource analyzes the various elements that can contribute to the success interprofessional education (IPE) courses at the undergraduate level by evaluating the highest quality studies available pertaining to this topic. Twenty-one studies pertaining were analyzed from the United States, Sweden, Finland, and the United Kingdom. The 3-P model is used to analyze the factors in the areas of presage (context), process, and product. Statistical analysis was also employed when appropriate to evaluate outcomes of the IPE course studies in the areas of reactions, modification of perceptions and attitudes, acquisition of knowledge and skills, behavioral change, change in organizational practice, and benefits to patients/clients. The authors present key messages and lessons for practice that will be very beneficial to consider in the development of the current IPE course at UT. Examples are the importance of staff training, the need of authenticity and customization in learning activities, the utilization of adult learning
theory in course development, the need for quality course evaluations, and general student outcomes.

This article intended to include only the highest-quality studies available on the topic. However, caution should be warranted due to the fact the conclusion drawn from the gathered data is based on author opinion.

Interprofessional Education in Geriatric Care Project Team. (2006). Interprofessional education seminar. Retrieved from:


Abstract:

“Seminars play an important role in peer development and learning. The Interprofessional Education in Geriatric Care (IEGC) Project, at the University of Manitoba, identified three learners and formed three domain groups to address the needs for each learner. The Faculty Learner Domain group was created to identify sources for professional development and to address learning needs during the.

The Faculty Learner Domain developed the Interprofessional Education seminar series manual to share their learning experiences with faculty members involved in the IEGC Project. The seminar topics centre on interprofessional teaming and are designed to stimulate peer teaching and discussions centring on interprofessional education. The contents of this manual provide a guideline for discussing topics and issues related to interprofessional education.

The manual is organized into three sections which outlines:

• Seminar process (structure and roles for seminar leader and participants)
• Seminar materials (Appendix A—potential topics and sign up sheets)
• Appendices (B to I) including seminar readings and objectives for discussion
Compiled are the resources developed and used by IEGC faculty to create a professional development opportunity through peer teaching.”

**Summary and Significance:**

This resource introduces the seminar as a type of teaching-learning method, which is the potential format for the course in development. The main portion of the manual consists of appendices which present the various seminar topics relating to interprofessional education (IPE) included in this seminar series. Appendix A is a list of possible IPE seminar topics. The remaining appendices address common terminology, models to evaluate IPE program sustainability, evidence–based methods in IPE, team development and functioning, evaluating the effectiveness of IPE programs and teams, and liability in interprofessional practice. With each topic is a list of suggested readings to supplement learning on that particular area. This is ultimately a very helpful reference list that can be used to stimulate investigation into the literature on IPE in hopes of creating a successful IPE course. Also with each topic area of this manual are learning outcomes and study questions. These could be great reference tools when formulating goals, objectives, and content for the current IPE course in development.


**Abstract:**

**Background:** The literature on facilitation of interprofessional learning (IPL) tends to discuss its importance rather than providing empirical accounts focused on understanding its nature and the factors that make it effective.
**Aim:** This study aims to provide an initial insight into facilitators’ experiences of facilitation, and begin to identify some of the key elements that contribute to successful facilitation of IPL.

**Methods:** 2 focus group interviews were held with facilitators of IPL (n=5; n=8) within a higher education setting. Follow-up telephone interviews were undertaken with 6 facilitators. Thematic analysis was undertaken on the data. All facilitators were invited to a presentation of findings in order to help validate the authors’ interpretation of the data.

**Results:** Results indicated that facilitators valued both their induction and their weekly debriefing meetings in preparing and developing them for their role. To be effective, facilitators felt they needed to display a range of attributes including enthusiasm, humour, and empathy. Despite enjoying their work, facilitators reported that their role in IPL was challenging, more so than problem based learning (PBL) with uni-professional groups.

**Conclusions:** The study indicated that the facilitation of IPL is a complex and demanding activity. It also indicated that the use of a facilitator induction and regular de-briefing sessions were key to supporting the facilitators work and fostering interprofessional collegiality.

**Summary and Significance:**

This study shows the demands placed on the educators of an interprofessional course. The seven main themes that arose from participant responses were induction, peer support, becoming a facilitator, effectiveness, facilitating learning, successes, and challenges. The finding of this study present some implications for the current course development in terms of the needs of faculty members or other stuff who will be involved in teaching this course. Awareness of these needs will help ensure that measures are taken to avoid potential problems identified in the literature. For example, participants in this study reported benefiting from an induction course
and weekly de-briefing sessions to help prepare them for the unique challenges of teaching an interprofessional course. Incorporating such elements for faculty involved in the current course might be considered. It might also be considered to study faculty perceptions of this course under development if it is implemented at UT in the future to contribute to this body of research knowledge.


**Abstract:**

“The increased growth of interdisciplinary education programs in the allied health professions has presented the need for alternate forms of assessment that go beyond basic performance indicators. These assessments would gauge professionally oriented perceptions and related affective domains for participants in such programs. The present study describes the design and validation of an Interdisciplinary Education Perception Scale (IEPS) to meet that added assessment need. In addition to presenting the instrument and its scoring procedures, this study also offers cross-disciplinary normative data and statistical power estimates for appropriate use of the IEPS in evaluative and related research settings.”

**Summary and Significance:**

The authors of this study describe the development IEPS, its psychometric properties, and its appropriate use. The IEPS is meant to four elements deemed essential to settings involving interdisciplinary collaboration. These are: 1) professional competence and autonomy, 2) perceived needs for professional cooperation, 3) perception of actual cooperation and resource sharing within and across professions, and 4) understanding the value and contributions of other
professionals/professions. The 18 questions of the questionnaire are presented in this article. The sample used to gather psychometric data on the IEPS included students from several health professions, including occupational therapy. There is normative data specifically for occupational therapy students, which makes the IEPS especially relevant to the IPE course under development. The authors suggest that this questionnaire be used as a tool pre- and post-evaluation for student feedback. This could be easily done in the IPE course under development.


Abstract:

“A systematic review of interprofessional education (Freeth et al., 2002) revealed that there were many weaknesses in the current body of knowledge of interprofessional education outcomes. One reason for this was the lack of good quality study designs for evaluating the outcomes of interprofessional education. This paper discusses the range of tools that were found in the literature and describes the production and validation of two questionnaires that can be used as part of an interprofessional evaluation strategy. Firstly, a Generic Role Perception Questionnaire which can be used for measuring the perception of the role of a range of professions and a Nursing Role Perception Questionnaire used specifically for measuring the perception of the role of a nurse. Repertory grid technique was selected to elicit constructs from a multiprofessional group of final year undergraduate students. This pool was then used to develop the two questionnaires. Factor analysis, internal consistency and test re-test measures are used along with evidence of validity. The questionnaires were found to have acceptable validity
and reliability and could be used as part of an IPE evaluation strategy to measure changes in professional role perception in an undergraduate population.

**Summary and Significance:**

This article focuses on evaluation measures that can be used for interprofessional learning experiences to address students’ perceptions of the roles of other professions. In the article, the authors describe and critique two different questionnaires, the Interdisciplinary Education Perception Scale (IEPS) by Leucht et al (1990) and the Readiness for Interprofessional Learning Scale (RIPLS) by Parsell and Bligh (1999). The original sources for these questionnaires should be obtained to review these measurement tools in greater depth in terms of their development and applicability.

The authors then go on to describe two newly developed questionnaires, the Generic Role Perceptions Questionnaire (GRPQ) and the Nursing Role Perceptions Questionnaire (NRPQ). The final questions included in the questionnaire are included in the article. Acceptable reliability and validity levels were determined, but the authors conclude that further research is needed on the applicability of these two questionnaires. The GRPQ is a possible evaluation tool that could be incorporated with caution into the IPE course under development.

**McCallin, A. (2006). Interdisciplinary researching: Exploring the opportunities and risks of working together.** *Nursing and Health Sciences, 8,* 88-94.

**Abstract:**

“The aim of this paper is to explore the issues that present both opportunities and risks when working in an interdisciplinary research project. As the research context changes in the social reform environment, some scientists suggest it is time to forge new scientific working relationships, to open up the boundaries between disciplines. Interdisciplinary research is an
alternative approach for nurses who might develop different ways of working with health researchers from other disciplines. The ideas in this paper come from a larger, grounded theory study on interdisciplinary teamwork. The changing research context, the meaning of interdisciplinary working, collaboration, and competence, integrating different disciplinary perspectives, interprofessional learning opportunities, and the relevance for nurses are explored in relation to interdisciplinary researching. Interdisciplinary researching is complex and potentially risky; however, it does offer nurses the opportunities for professional growth, development, and research work satisfaction. Many nurses are already well-trained researchers and might consider developing roles as interdisciplinary research project managers as well.”

**Summary and Significance:**

While this article focused on the implications of research teams of nurses, its findings can be applied to the current course development. The authors suggest many characteristics of interprofessional teams that help make the effective. Such characteristics include effective interpersonal communication, pooling together skills and expertise of team members, respecting one another’s competencies and roles, adapting to change, and identifying shared team values. These are all elements that the course instructor of the current interprofessional course under development should address, both formally and informally. This content could be discussed in a formal lecture format accompanied by small team building occupations. These characteristics should also be informally addressed throughout the semester by interaction and observation of group dynamics and function. This content area would also be beneficial to faculty members serving as team mentors. Being aware of the potential opportunities and risks of interprofessional learning experiences can help them to facilitate strong and successful interprofessional teams in the course.
Mitcham, M. (2011). *If one is good, two or more are better! A synopsis of interprofessional education at the Medical University of South Carolina* [PowerPoint slides].

Abstract:

An abstract was not included for this source.

Summary and Significance:

In this lecture presentation, Dr. Mitcham explains her involvement with interprofessional education (IPE) at the Medical University of South Carolina where she is a professor and chair of the Department of Health Professions. The definition of interprofessional education is provided, as well as a history of such educational structure in the U.S. This presentation will be very helpful in generating ideas for interprofessional learning opportunities in the course under development. It also includes a wealth of additional resources pertaining to IPE that will aid in the research of this topic.


Abstract:

An abstract was not included for this source.

Summary and Significance:

This book provides insight into a unique model of teaching, the Integrative Teaching and Learning Model. This model focuses on creating a curriculum that centers multiple disciplines, instructional strategies, and learning experiences around a chosen problem. To reach a solution, student must actively engage in the problem-solving process. While this model was created based on elementary school level students, the concepts can be applied to the college level. For example, the current course development is designed with the intention of bringing students
together from different areas of study with a selected problem to solve, that of creating an assistive device for a given client. Understanding the Integrative Teaching and Learning Model can help facilitate the development of an effective course and even that of an overall curriculum.


**Abstract:**

“Objectives: Although shared learning activities are gradually being introduced to health care undergraduates, it has not been possible to measure the effects of educational interventions on students’ attitudes. The main objective of this study was to develop a rating scale using items based on the desired outcomes of shared learning, to assess the ‘readiness’ of health care students for shared learning activities.

*Design and participants:* A questionnaire study of 120 undergraduate students in 8 health care professions.

*Results:* Principle components analysis resulted in a 3-factor scale with 19 items and having an internal consistency of 0.9. The factors have been initially named ‘team-working and collaboration,’ ‘professional identity’ and ‘professional roles.’

*Conclusions:* The new scale may be use to explore differences in students’ perception and attitudes towards multi-professional learning. Further work is necessary to validate the scale amongst a larger population.”

**Summary and Significance:**

Parsell and Bligh (1999) developed a tool to measure perceptions and attitudes towards interprofessional learning which was the focus of this study. Three subscales of questions
emerged: teamwork and collaboration, professional identity, and roles and responsibilities. The authors report high content validity for this measurement tool, but given that this study involved a relatively small sample size, results may not be generalized to a larger population. Since this was only a pilot study, the authors suggest that further research is needed to determine if this tool can actually record shifts in attitudes.

The results of this study are positive, but since further research is deemed necessary for its use, this may not be the best tool to use in this course development to determine student perceptions and attitudes regarding interprofessional collaboration. Further review of literature should take place to explore other options for evaluation measures pertaining to this topic.


**Abstract:**

An abstract was not included for this source.

**Summary and Significance:**

This resource depicts the World Health Organization’s (WHO) perspective on the need for interprofessional education and collaboration worldwide. The need for this interprofessional work is described in the Framework, education and political strategies to establish interprofessional work, as well as a call to action. According to the Framework, collaborative practice can improve factors such as access to and coordination of health care services, health outcomes, and patient safety. Factors including length of hospital stay, patient complications, errors in care, and mortality rates can be decreased by collaborative care. The elements of institutional supports, work culture, and environment are briefly discussed for their relevance to
facilitating successful collaborative practice in the workplace. In order to have successful
interprofessional teams in the workforce, students must be properly trained in working and
learning with and from other professions. Various educator and curricular methods are suggested
for employing successful interprofessional learning experiences.

The course under development will have a content area devoted to the topic of
interprofessional collaboration. This resource could be used to soundly justify the need and use
of interprofessional learning experiences to students of the course. The key points made in this
Framework can help students better understand the reality of the future work environment as a
healthcare professional which could increasingly involve serving on interprofessional teams.
Finally, this resource also justifies the development of the current course and the importance of
this topic area in professional education. This document could be cited when speaking with
faculty at The University of Toledo or other institutions in this topic.

World Health Organization. (2012). *International classification of functioning, disability,

Abstract:

An abstract was not included for this source.

Summary and Significance:

This resource explains the purpose of the ICF and how its perspective on disability has
changed from earlier views. Also found on this site is a link to the ICF Browser, which provides
a searchable outline of the main sections of the ICF. The overall purpose of the ICF is to classify
the domains of health and health-related states at both the levels of the individual and population.
This document is unique from similar documents preceding it in that in views disability as a
universal experience and recognizes environmental mediating factors, as opposed to placing the
disability solely within the individual. This resource also makes specific references to the role of assistive technologies as environmental elements.

This document could be referenced in formulating common language between occupational therapy and mechanical engineering students involved in the IPE course under development that will be vital for successful interprofessional collaboration. It could also help students better understand the role of assistive technologies for clients and their respective roles as assistive technology providers.


**Abstract:**

**Background:** Poor interprofessional collaboration (IPC) can negatively affect the delivery of health services and patient care. Interventions that address IPC problems have the potential to improve professional practice and healthcare outcomes.

**Objective:** To assess the impact of practice-based interventions designed to change IPC, compared to no intervention or to an alternate intervention, on one or more of the following primary outcomes: patient satisfaction and/or the effectiveness and efficiency of the health care provided. Secondary outcomes include the degree of IPC achieved.

**Search methods:** We searched the Cochrane Effective Practice and Organization of Care Group Specialized Register (2000-2007), MEDLINE (1950-2007) and CINAHL (1982-2007). We also handsearched the Journal of Interprofessional Care (1999 to 2007) and reference lists of the five included studies.
**Selection criteria:** Randomized controlled trials of practice-based IPC interventions that reported changes in objectively measured or self-reported (by use of a validated instrument) patient/client outcomes and/or health status outcomes and/or healthcare process outcomes and/or measures of IPC.

**Data collection and analysis:** At least two of the three reviewers independently assessed the eligibility of each potentially relevant study. One author extracted data from and assessed risk of bias of included studies, consulting with the other authors when necessary. A meta-analysis of study outcomes was not possible given the small number of included studies and their heterogeneity in relation to clinical settings, interventions and outcome measures. Consequently, we summarized the study data and presented the results in a narrative format.

**Main results:** Five studies met the inclusion criteria; two studies examined interprofessional rounds, two studies examined interprofessional meetings, and one study examined externally facilitated interprofessional audit. One study on daily interdisciplinary rounds in inpatient medical wards at an acute care hospital showed a positive impact on length of stay and total charges, but another study on daily interdisciplinary rounds in a community hospital telemetry ward found no impact on length of stay. Monthly multidisciplinary team meetings improved prescribing of psychotropic drugs in nursing homes. Videoconferencing compared to audioconferencing multidisciplinary case conferences showed mixed results; there was a decreased number of case conferences per patient and shorter length of treatment, but no differences in occasions of service or the length of the conference. There was also no difference between the groups in the number of communications between health professionals recorded in the notes. Multidisciplinary meetings with an external facilitator, who used strategies to
encourage collaborative working, was associated with increased audit activity and reported improvements to care.

**Authors’ conclusions:** In this updated review, we found five studies (four new studies) that met the inclusion criteria. The review suggests that practice-based IPC interventions can improve healthcare processes and outcomes, but due to the limitations in terms of the small number of studies, sample sizes, problems with conceptualizing and measuring collaboration, and heterogeneity of interventions and settings, it is difficult to draw generalizable inferences about the key elements of IPC and its effectiveness. More rigorous, cluster randomized studies with an explicit focus on IPC and its measurement, are needed to provide better evidence of the impact of practice-based IPC interventions on professional practice and healthcare outcomes. These studies should include qualitative methods to provide insight into how the interventions affect collaboration and how improved collaboration contributes to changes in outcomes.

**Summary and Significance:**

This is a very high-quality meta-analysis done by a well-respected organization, so the findings of this study could be highly regarded in their application to the current course development. The authors broadened their search inclusion criteria from interprofessional collaboration between physicians and nurses to include all health professions, including occupational therapy. Only five studies met the remaining inclusion criteria and none of these studies pertained directly to occupational therapy practitioners. The studies that were included focused mainly on nursing and physicians and analyzed the effects of interdisciplinary rounds, multidisciplinary team meetings, and interprofessional audit on the outcomes including length of patient stay and improvements in care.
Overall, the authors of this article report that practice-based interprofessional interventions can positively influence health outcomes and processes. Since these findings are based on studies with small sample sizes and select interprofessional group, caution should be taken in applying these findings in support of the current course development. In addition, these findings may not directly apply to the current course under development since it will include different groups of students than the professions represented in this study as well as create interprofessional teams with purposes different from those of the teams studied in this meta-analysis.

**Educational and Professional Standards**

**Accreditation Council for Occupational Therapy Education. (2006).** *Accreditation standards for a doctoral-degree-level educational program for the occupational therapist.* Retrieved from:  

**Abstract:**

An abstract was not included for this source.

**Summary and Significance:**

The Accreditation Council for Occupation Therapy Education (ACOTE) is the accrediting body of the American Occupational Therapy Association. ACOTE is recognized by the United States Department of Education (USDE) and currently accredits nearly 300 occupational therapy and occupational therapy assistant educational programs. This resource represents the accreditation standards specifically for doctoral-level degree programs. There are two main sections of standards: (A) general requirements for accreditation; and (B) specific requirements for accreditation. Section A is further broken down into the following sub-
categories: scholarship and accreditation; academic resources; students; operational policies; strategic plan and program assessment; and curriculum framework. Section B is comprised of the following sub-categories: foundational content requirements; basic tenets of occupational therapy; occupational therapy theoretical perspectives; screening, evaluation, and referral; intervention plan; context of service delivery; leadership and management; research; professional ethics, values, and responsibilities; fieldwork education; and doctoral-level experiential component.

Given that the occupational therapy program at The University of Toledo is a doctoral-level program that is accredited by ACOTE, this resource is extremely relevant in understanding what is required of faculty, students, curriculum, and program as a whole. This is a very credible and objective resource that is essential to the foundation of the course of this Capstone project, helping to ensure that the course possesses the level of quality necessary to meet these high educational standards.


Abstract:

An abstract was not included for this source.

Summary and Significance:

The American Occupational Therapy Association (AOTA) publishes articles representing the position of the profession of occupational therapy (OT) on prominent issues. One position paper has been written on the topic of assistive technology. AOTA holds that assistive technologies, as legally defined by the Technology-Related Assistance for Individuals with
Disabilities Act of 1988, are important elements of occupational therapy services for habilitation and rehabilitation of issues across the lifespan in a variety of practice settings. OT practitioners are qualified in the evaluation and provision of simple and complex assistive technologies, as well as training clients and caregivers on device use, justifying a need, applying for funding, and following up on services provided. They should also collaborate with other relevant professionals on the health care team. These could include physical therapists, speech therapists, technology suppliers, rehabilitation engineers, and special educators.

This document will be key in describing the role of occupational therapy in assistive technology in the IPE course under development. It could be included under the content area of professional practice which is meant to facilitate students’ understanding of real-world practice and role expectations as a working professional. Given that this document comes from the AOTA, reviewing it in the course strongly justifies OT’s role and will help students form a professional identity in this area of practice. A sound professional identity will ultimately contribute to the successful function of the interprofessional teams in the course and improve client outcomes.


Abstract:

An abstract was not included for this source.

Summary and Significance:

This is “a public statement of principles used to promote and maintain high standards of conduct within the profession” set forth by AOTA that should be used by occupational therapy
professionals to guide conduct in the presence of ethical issues. The historical foundation of this document is based on the need for OT professionals to use ethical reasoning and empathic reflection when encountering and handling issues surrounding the profession. Specifically, this document intends to:

1. “Identify and describe the principles supported by the occupational therapy profession;
2. Educate the general public and members regarding established principles to which occupational therapy personnel are accountable;
3. Socialize occupational therapy personnel to expected standards of conduct;
4. Assist occupational therapy personnel in recognition and resolution of ethical dilemmas.”

This resource will be essential in the development of the course in this Capstone project. First, the ACOTE Standards for a Doctoral-Degree-Level Educational Program for the Occupational Therapist (ACOTE, 2006) requires that students of ACOTE-accredited programs are able to demonstrate a knowledge and understanding of these ethics Standards and use them as a guide during professional practice. These standards provide not only the ethical framework for the profession of occupational therapy, but also the ethical theme that should be thread through the entire OTD curriculum at UT, including the course under development.


Abstract:

An abstract was not included for this source.
Summary and Significance:

The National Society of Professional Engineers (NSPE) sets forth a Code of Ethics for professionals in the field of engineering. The document is divided into a preamble, fundamental canons, rules of practice, professional obligations, and a statement by the NSPE Executive Committee. The fundamental canons are to hold paramount public welfare, performing services only within one’s competence, issuing public statements truthfully and objectively, act as a trustee for clients and employers, avoiding deceptive acts, and conducting oneself in such a way as to honor and enhance the reputation and usefulness of the profession. Rules of practice and professional obligations expand upon these canons.

This Code of Ethics for the engineering profession should be included in the course under development in the content area of professional practice. Engineering students will most likely be quite familiar with this document, but it will still be beneficial to review. NSPE’s Code of Ethics can be compared with that from AOTA representing the occupational therapy profession. Students might compare and contrast the two documents and make suggestions for modifications to them. Having students from both the OT and engineering professions review the Code of Ethics from both professions will help them become more knowledgeable about each other’s professions and their respective ethical backgrounds. This will contribute to the development of one’s professional identity on the interprofessional team.

Rehabilitation Engineering and Assistive Technology Society of North America. (n.d.).

Code of ethics. Retrieved from:

Abstract:

An abstract was not included for this source.
Summary and Significance:

The Code of Ethics of the Rehabilitation Engineering and Assistive Technology Society of North America (RESNA) should be used to guide professional practice in assistive technology and rehabilitation. There are eight basic tenants that comprise this document. Both MIME and OTD students should be aware of this Code of Ethics and uphold its tenants in their own practice throughout the duration of the IPE course. This document will be reviewed in lecture so that all students are aware of what is required of them professionally and ethically. Students should also be reminded that they must adhere to the ethics standards of their respective disciplines in addition to RESNA’s standards.


Abstract:

An abstract was not included for this source.

Summary and Significance:

The Rehabilitation Engineering and Assistive Technology Society of North America (RESNA) is a professional organization supporting quality practice in the field of assistive technology. RESNA offers certifications for three different specialties- Assistive Technology Professional (ATP), Seating and Mobility Specialist (SMS), and Rehabilitation Engineering Technologist (RET). These certifications are meant to identify practitioners and suppliers with exceptional quality in service delivery and practice. Professionals who have obtained these certifications have represented a number of different fields including occupational therapy, physical therapy, speech-language pathologists, engineers, educators, and equipment suppliers.
These are career options that OTD and MIME students involved in the IPE course should be aware of to broaden their knowledge of potential career tracts as well as the different types of professionals they could potentially work with in this area of practice.

The University of Toledo Mechanical, Industrial, and Manufacturing Engineering Department. (2012). Curriculum. Retrieved from:


Abstract:

An abstract was not included for this source.

Summary and Significance:

Reviewing the curriculum that the undergraduate mechanical engineering students undertake is very beneficial in understanding the content these students receive throughout their undergraduate career. Every course is listed on this website with its corresponding course description. Many of the courses and content areas may not directly relate to the interdisciplinary course under development; however, the knowledge and skills gained through all of the courses will indirectly culminate and contribute to problem solving and design abilities required in the mechanical engineering capstone course, and thus to success in a new interdisciplinary component.

It is also beneficial to learn of content required outside of the engineering department, such as humanities, social sciences, communication, and multicultural issues. Knowledge of these course requirements provides further insight into the type of knowledge and skill sets engineering students can contribute to an interprofessional course.

The University of Toledo Mechanical, Industrial, and Manufacturing Engineering
Department. (2012). Design clinic. Retrieved from:
http://www.eng.utoledo.edu/mime/design/.

Abstract:
An abstract was not included for this source.

Summary and Significance:
This webpage explains the history behind and structure of the Senior Design Clinic at UT’s MIME Department. The Senior Design Clinic is part of the engineering capstone course and facilitates collaboration between students, faculty, and industries where “students work in teams using knowledge gained in earlier courses to solve real world design, manufacturing, and operational problems relevant to industries.” Oral and written communication skills are stressed, as well as teamwork. Also of focus are the topics of manufacturing, patents, product liability, safety, ethics, technical report writing, and presentation skills. The Senior Design Clinic gives Capstone students an added real-world experience, helps students to understand what will be expected of them as entry-level engineers, and allows them to network with potential employers. This is a beneficial resource to review in order to gain an understanding of the basic structure and benefits of the MIME Department Senior Design Clinic at UT.

The University of Toledo Mechanical, Industrial, and Manufacturing Engineering Department. (2012). Program goals. Retrieved from:

Abstract:
An abstract was not included for this source.

Summary and Significance:
The Program goals for the Mechanical, Industrial, and Manufacturing Engineering (MIME) Department at The University of Toledo (UT) is beneficial to review in order to gain a broad perspective of the goals of this educational program. These goals include working in teams on group projects, prepare and deliver written and oral presentations, and develop communication skills, all of which are relevant to the interprofessional education course under development. While these goals are broad, it is necessary to integrate these goals into the learning activities and student outcomes of the capstone course under development.


Abstract:

An abstract was not included for this source.

Summary and Significance:

The MIME Department sets forth certain outcomes that they wish graduates of the mechanical engineering program to achieve. These student outcomes are a bit more specific than the overall MIME program goals. It is necessary to have an awareness and understanding of the goals of this program to ensure that learning activities in the interprofessional course help learners to achieve these goals. Three of these goals most strongly relate to the course under development, namely goals c, d, and e. Goal c pertains to designing a component within the constraints of economics, ethics, health and safety, politics, social environment, and manufacturability. Goal d is specifically for the ability to function on multidisciplinary teams. Goal e pertains to identifying, formulating, and solving engineering problems. These goals will tie in strongly to the interprofessional course under development.
The University of Toledo Occupational Therapy Department. (2012). *Program curriculum design statement.* Retrieved from:


Abstract:

An abstract was not included for this source.

**Summary and Significance:**

The Curriculum Design Statement of the OTD program at UT explains the framework which guides faculty in planning, implementing, and evaluating the curriculum. “This curriculum design, therefore, is the vehicle which guides the faculty and students in operationalizing the Program’s Mission and Philosophy.” The curriculum is designed around four major themes, the first of which is PARADM. Pronounced “paradigm,” this acronym stands for practice, advocacy, research, and autonomous decision making. The next theme is the use of the Conceptual Framework of Therapeutic Occupation (CFTO) as a source of common language of the OT profession and way of critically analyzing other OT models of practice. The third theme pertains to the analysis of several of the major models of practice of OT along with the integration of research, theoretical perspectives, OT practice skills, and information from supporting disciplines to facilitate students’ flexibility in handling practice problems. Finally, theme four emphasizes a strategic plan student for practicum experiences that will expose students to both traditional and non-traditional areas of practice and gradually increase students’ level of autonomy.

This document will help guide the development of this capstone course by contributing to the vital foundation of goals and values unique to this particular educational program. An understanding of the curricular design of this program will help determine the scope and
placement of content of the course under development and identify areas in which this course will be evaluated for effectiveness.


**Abstract:**

An abstract was not included for this source.

**Summary and Significance:**

This document provides the specific curricular goals of OTD program at UT. These goals are divided into the categories of practice, advocacy, research, autonomous decision making (PARADM). There are particular goals that pertain to multi-disciplinary and inter-disciplinary collaboration, namely goals 1C, 2l, and 4K. This document will be important to refer to throughout the development of this capstone course to ensure that learning activities are created that help to achieve these goals and coincide with the values that these goals reflect.


**Abstract:**

An abstract was not included for this source.

**Summary and Significance:**

This resource provides the mission statements for The University of Toledo, the Judith Herb College and Education, Health Science, and Human Service, and the Occupational Therapy Doctorate Program. These statements are beneficial to review in order to gain an understanding
of the broader values and goals of the institution that this capstone course is being developed for, from the university as a whole down to the specific program of study. Awareness and understanding of these mission statements will provide an essential foundation for the course under development and help ensure that over-arching goals of the respective institution, college, and program are incorporated into this course.

The University of Toledo Occupational Therapy Department. (2012). Program philosophy. Retrieved from:


Abstract:

An abstract was not included for this source.

Summary and Significance:

The Program Philosophy for the Occupational Therapy Doctorate program at UT begins with a concise historical justification of the use of occupation, followed by a definition for therapeutic occupation, and the role of an occupational therapist. It goes on to describe a specific conceptual framework used by this program to teach a distinct perspective and terminology of the occupational therapy profession. Values pertaining to doctoral-level OT education and preparation for entry-level practice are explained, followed by specific OTD values. Reviewing this program philosophy provides a deeper context of the goals and values of the educational program for which this capstone course should be developed. These values should be embedded into the interdisciplinary course under development and tied together with the values of the other participating program(s). This would also be a beneficial introductory document to be read by students who are from other majors/disciplines when participating in an interdisciplinary course with OT students.
Assistive Technology

http://portale.siva.it/files/a16_1_Andrich_Cost_analysis.pdf.

Abstract:

“The SCAI instrument was designed to help clinicians estimate the economic aspects of the provision of assistive technology (AT) solutions to individual users. Using the instrument involves three steps: 1) describing the objectives of the individual AT programme, 2) establishing the sequence and the timing of all the interventions that form the programme and 3) compiling a cost calculation table for each AT solution. The last distinguishes between social costs (the sum of all material and human resources mobilized by the intervention) and the financial plan (the actual disbursement of money over time by all actors involved). The social cost is the main indicator of the economic significance of the AT solution; alternative solutions should be compared in terms of their social cost. The financial plan identifies the expenditure, i.e. the cash that should be dispensed by the funding actors during the programme lifecycle.

The SCAI is not primarily intended as a decision-making tool; it ought to be looked at as an informative tool that adds to the clinical assessment so as to make clinicians and users aware of the economic consequences of their decisions.

The article also explores the possibility of using SCAI to compare different individual AT programs. Based on a survey of several individual AT programs carried out over a number of years, an attempt has been made to infer social cost indicators for various categories of AT equipment. The clear finding is that – not surprisingly- most AT solutions, though very expensive in terms of initial purchase price, lead to considerable savings in social costs due to the reduced assistance burden. The second major finding is the marked variation in the social
costs of different individual cases where similar AT interventions were implemented, suggesting difficulty in establishing repeatable social cost figures for a given device; such figures also depend on the individual context of the AT solution, and on its inter-relationship with the other AT solutions composing the whole program.”

**Summary and Significance:**

This article provides an analysis on a specific assessment tool, the SCAI. Cost efficiency of designs is a factor that students in the IPE course will have to consider since teams are allotted only a certain amount of money to ensure that all teams have equal access to the grant that funds the projects. Currently, the MIME students calculate the financial cost of building each of their proposed designs and ultimately choose a design that is within the financial means of the course to construct. Using the SCAI, MIME and OTD students together could analyze both the financial and social costs of each design that is initially proposed to meet the needs of their clients. This would guide them in choosing the design that is most appropriate for the client. Authors of this study found that even though a certain device might be more expensive initially, it could potentially save in costs long-term if it increases independence and reduces caregiver assistance. This is an interesting implication that students might want to consider.


*Informational database of assistive technology assessments. Retrieved from:*

http://www.r2d2.uwm.edu/atoms/idata/#browse.

**Abstract:**

An abstract was not included for this source.

**Summary and Significance:**
This website provides links for numerous assistive technology assessments and outcome measurement tools that can guide practitioners in selecting and evaluating various types of devices. There is also a list of definitions relevant to the service delivery process, including the terms screening, referral, implementation, follow-up, and outcomes among others.

This could be a very valuable resource for students of the IPE course under development to utilize to choose the best type of device for their client. By using this website to browse numerous assessment and outcome measurement tools, students will be refining their clinical reasoning skills pertaining to choosing the most appropriate standardized tools. Using appropriate standardized tools in the assistive technology process can contribute to the quality of assessments and evaluations performed by the students. This will contribute to the overall quality case studies completed by students, potentially increasing their likelihood of being published in scholarly journals and advancing the engineering and occupational therapy professions.


**Abstract:**

An abstract was not included for this source.

**Summary and Significance:**

This reference is for the homepage of the Assistive Technology Outcomes Measurement System, or ATOMS, Project. According to the site, the ATOMS Project is a five year project funded in part by the National Institute on Disability and Rehabilitation Research (NIDRR). It is led by Dr. Roger O. Smith, a professor in the occupational therapy department at the University of Wisconsin-Milwaukee, along with Dr. Dave L. Edyburn, Professor of Exceptional Education in the School of Education at the same university. The purpose of this project is to first conduct a
thorough needs assessment focusing on current literature available on assistive technology use, effectiveness measures, cost analysis, perspectives of stakeholders of assistive devices, and the issue of abandonment of device use. The results of this needs assessment will be used to create prototypes of new assistive devices, establish an inventory of AT devices and services, create sound outcome measures, and create a new protocol for identification of costs.

This page also provides numerous links where the reader can explore different aspects about the ATOMS Project, including an executive summary, project abstract, publications, technical reports and bibliographies.

This resource is a great starting point for obtaining current empirical information about assistive technology, specifically measuring outcomes of the provision of assistive technology devices and services. The guidelines gathered through review of the various resources available on this site will help ensure best-practice measures are utilized by the instructor and students in the current course under development.

**Cook, A.M. & Polgar, J.M. (2008). Delivering assistive technology services to the consumer.**

In K. Falk, M. Deutsch (Eds.), *Cook & Hussey’s assistive technologies: Principles and practice* (pp. 91-142). St. Louis, MO: Mosby, Inc.

**Abstract:**

An abstract was not included for this source.

**Summary and Significance:**

Chapter four of this book addresses the delivery of assistive technology services, including the assessment process, implementation of services, follow-up and follow-along, and evaluating the services provided for their effectiveness. Several suggestions are provided for evaluating various aspects of the client and his/her environment, including physical, sensory,
cognitive, language components, with sample evaluation forms provided as appendices to the chapter. This is followed by discussion on the characteristics of a device and how to match these characteristics to the needs and skills of the user. There are also specific suggestions for measuring clinical and functional outcomes and effectiveness of service delivery.

This chapter provides an overview of the occupational therapy process as it relates to assistive technology. This content will be very relevant to both OT and MIME students in the course under development. OT students should be relatively familiar with this content as they learn about this topic in a separate course. This information could thus serve mainly as a review for this group of students. Still, they will need to apply this content more specifically and in greater depth what might be required in other courses. They could also reference this chapter throughout the course as they approach and progress through the various stages of service delivery. MIME students will also benefit from this information as it will help them to understand the more complete process of involved in providing assistive technology services beyond the mechanical design and construction of a device. This content in this chapter could be formally presented in lecture format or used as more of a reference tool for students.


Abstract:

An abstract was not included for this source.

Summary and Significance:

Chapter two of this book more formally introduces the Human Activity Assistive Technology framework (HAAT), with in depth discussions addressing each of the framework’s
four components – the human, the activity, the assistive technology, and the context. This framework can be used to guide the design, selection, implementation, and evaluation of different assistive technologies. This framework’s concept of an entire assistive technology system is also introduced, with guiding tips for the practical application of this framework.

The HAAT framework described in this chapter is one that could readily be used in the IPE course under development. Its focus on assistive technology makes it an obvious fit, but it also provides a thorough context for students to be able to better understand the role of assistive technologies and their roles as professionals. While this framework is strongly based from an occupational therapy, physical therapy, and speech therapy perspective, it could be also understood and utilized by other professionals, such as the mechanical engineering students involved in this IPE course. The terminology of the HAAT framework could thus be used to create common language among students from both the occupational therapy and mechanical engineering professions that will be important for successful interprofessional collaboration.


Abstract:
An abstract was not included for this source.

Summary and Significance:
Chapter one of this book explains basic background information about assistive technology that is relevant content to potentially include in the current course development. Definitions are provided for assistive technology devices and services according to the World Health Organization. Assistive technologies are then characterized into various categories. A
historical review is given addressing the evolution of technologies and relevant legislation and policies. This is followed by a review of the current assistive technology industry, including defining the consumer and direct consumer service programs. Finally, professional practice in this area is covered with sections on service providers, ethics and practice standards, and quality assurance.

This chapter provides foundational information that will be beneficial for students of the IPE course to first understand in order to more deeply understand the role of assistive technologies. This chapter also introduces basic terminology relevant to assistive technology that could be used in the IPE course to facilitate common language among students from both the occupational therapy and mechanical engineering professions that will be important for successful interprofessional collaboration.


Abstract:

This report summarizes the outcomes information that can be gleaned from a database that was developed in the process of administering a large grant to infuse assistive technology into the Ohio public schools. The administration process was extensive, yielding a wealth of information. Because assistive technology outcomes were considered when designing the grant administration process, a number of data fields relate to the measurement of outcomes. Further analysis will be required to determine the information most salient to the measurement of outcomes. There are a number of features of this database that may contribute to the development of an outcome measurement system. Of particular interest is the incorporation of
outcomes measurement into the service delivery and administration process; the successful use of online data collection; and the use of a tool for collecting information on the relative contribution of various interventions.

**Summary and Significance:**

The most relevant part of this article is the diagram of the project model of the Assistive Technology Outcome Measurement System (ATOMS) Project. It is a great summary that depicts the occupational therapy process while incorporating the elements of assistive devices and services. This model could be used to help both MIME and OTD students conceptualize the role of assistive technology and services in the therapy process. This specific diagram could be incorporated into a lecture. Also, since this article describes outcomes information related to assistive technology in the Ohio school setting, this article might be relevant for students working with younger clients in need of devices for use at school to guide them in measuring outcomes.


**Abstract:**

“Issues surrounding the abandonment of assistive technology devices (AT) are complex. This fieldscan reviews the literature and posits a replacement for the term “abandonment” in preference to the term “discontinuance”, to imply a more accurate explanation of why AT is used or not used. As service providers better understand AT discontinuance, they can more effectively update, revise and improve AT services for consumers and their family members.
Likewise, as funding agencies better understand reasons for discontinuance, strategic third party reimbursement policy can support rational funding decisions. In the past, assistive technology disposal connoted irresponsibility of AT consumers, the AT industry, and service providers. That is, consumers “abandoned” equipment, service providers over prescribed, and the industry inappropriately over sold. This project analyzed the literature and found that despite some negative reasons why AT consumers’ dispose of their devices, there are also many neutral or positive reasons. We propose and briefly describe a theoretical model of positive and negative discontinuance. This model provides the basis for two conceptual measurement tools: 1) the Positive-Negative (PN) scale and 2) Factors of Discontinuance (FOD) formula. The tools were piloted with individuals donating devices to a statewide equipment collection and recycle program. This report reviews the theoretical background, development, and organization of the PN and FOD tools as they were operationalized in a preliminary survey.”

**Summary and Significance:**

This article presents factors surrounding the issue of assistive device users discontinuing the use of their device. This is an important issue for students of the IPE course to consider for several reasons. First, the students will surely want all of their hard work in designing and constructing a unique device to pay off by the client actually using that device. As this article suggests, there are negative and positive reasons why a client may stop using a device. Some negative reasons could be device malfunction, difficulty understanding how to use the device, the device requiring a level of skill to operate the device that is higher than the skill level the client actually has, and costly maintenance. These are factors that might be avoided if students perform thorough evaluations and collaborate with their clients throughout the entire design process. Students should also know that it could actually be a positive thing if their client no
longer uses the device. As the authors of this article suggest, positive factors for discontinuing device use could include various improvements in function such that the device is no longer needed in order to meet a functional goal. Students should address this issue of discontinuance at the initial client evaluation by eliminating or reducing negative factors that could lead to disuse, as well as at follow-up and follow-along assessment times by looking for both negative and positive reasons for discontinuance.


Abstract:

An abstract was not included for this source.

Summary and Significance:

This chapter provides a detailed historical look at the progression of the field of occupational therapy (OT). Reviewing this history is helpful to learn about the role of assistive technology in OT over time. According to this chapter, assistive technology was more formally used in the mid-century during a time of the Mechanistic Paradigm. During this phase of OT history, it was viewed that one’s performance is directly determined by underlying physiological functions and that performance could be improved by addressing these neuromotor, musculoskeletal, and intrapsychic impairments. “Therapists analyzed activities to determine the movements needed for crafts and other activities. They made or prescribed adaptive devices to bridge the gap between persons’ limited motion and the tasks they had to perform” (pp. 36).
Included in the content of the IPE course under development is the historical roles of occupational therapists and engineers with assistive technology. This information will help both OT and engineering students understand their professional identities in this practice area. Key information on this topic can be found in this chapter for the OT perspective. Similar information should be sought for the engineering profession.


**Abstract:**

An abstract was not included for this source.

**Summary and Significance:**

Assistive technology from an occupational therapy perspective is discussed in this chapter. It has much of the same terminology and content topics as other sources, so the information can be used to ensure accuracy of the information presented to students in the IPE course under development. The authors provide definitions for rehabilitation technology and assistive technology and the role of occupational therapy with each type. These descriptions can be incorporated into the IPE course content to help both occupational therapy and engineering students understand their professional roles and form a professional identity.

Also in this chapter is a brief section on the human interface assessment (HIA) model. This model explains that assistive technology can be brought in to bridge the gap between a client’s current abilities and his/her desired functional level. However, doing so introduces an interface between the device and the client that must also be considered. Knowledge about this...
model could help students in the IPE course further understand the implications of using assistive technologies.

This chapter is in a core text book for occupational therapy students at UT, so students should be able to easily reference this text for course assignments and answers to clinical reasoning questions.


Abstract:

An abstract was not included for this source.

Summary and Significance:

As the title implies, this chapter pertains to the use of high-technology assistive devices to compensate for various disabilities and improve function. From an occupational therapy perspective. Some of the content in this chapter has been found in other sources. For example, there is a brief overview of the Human Activity Assistive Technology Model (Cook & Hussey, 2002), and basic descriptions of various types of devices, the application of different devices for daily living. There is a small section on funding for assistive technologies, but this topic is covered in much more depth by in chapter one of Assistive Technologies: Principles and Practice (Cook & Hussey, 2002). The content in this chapter can be compared with similar content found in other resources to ensure accurate information is presented in the newly developed IPE course.

Also in this chapter is a section on the assistive technology assessment process. Much of this information was also found in other sources, but there is a unique diagram in this book that
summarizes the process visually. This diagram could be easily included into lecture content either in electronic or hard copy formats.

Finally, since this book is a core text in the OTD program at UT, students may be more easily able to reference this book throughout the IPE course for assignments and answers to clinical reasoning questions.


Abstract:

“The Matching Person & Technology (MPT) assessment process is a set of person-centered measures, all of which examine the self-reported perspectives of adult consumers regarding strengths/capabilities, needs/goals, preferences and psychosocial characteristics, and expected technology benefit. There are separate measures for general, assistive, educational, workplace, and healthcare technology use; in Ireland, the measures were used to assess outcomes of assistive technology (AT) provision for (a) people throughout the country participating in a new localized AT service delivery process and (b) students transitioning from secondary education. There are companion provider forms so that consumer-provider shared perspectives can be assessed and to ensure that the matching process is a collaborative one; the Irish version assumes collaboration from the start. Each measure can be used when evaluating a person for technology use and as person-centered, ideographic, outcomes measure. The measures have been determined to have good reliability and validity.”

Summary and Significance:

Matching Person & Technology is one example of an assessment measure that could be used by OTD students to obtain information from their clients regarding their own perceptions of
their strengths and abilities, needs, goals, and expectations of the use of the assistive device. The OTD students could then relay this information to the MIME students as appropriate to help guide the design process. Using this tool during the initial evaluation with clients could also help the students set intervention goals which can then be re-assessed for achievement at the conclusion of the semester. The authors of this study state that this measurement tool has good reliability and validity, making it appropriate for students to utilize with their clients.


**Abstract:**

“As the ATOMS Project activities progress, we have been watching our preliminary and interim findings. To summarize the soft and empirical findings, we created two documents. The first document relates to the ATOMS Project assumptions, combining where we were as our work commenced and the assumptions that we have identified during our investigations. The second document summarizes the ATOMS Project discoveries as they link to some of our specific research activities. They are presented here consecutively.

The charge from NIDRR provides the backdrop for the assumptions and discoveries. NIDRR suggested that the research a) perform a needs assessment pertaining to outcomes measurement in AT, b) explore available and new outcome measures and strategies for AT outcomes, and c) perform abandonment investigations related to the previous activities.”

**Summary and Significance:**

This document tells key general findings of the ATOMS Project. The first is a set of “assumptions” that could be used to guide students’ basic understanding of theories and
frameworks relating to assistive technology devices and services. For example, two models will be presented in the course that specifies the importance of context of assistive device use. One of the assumptions that the authors of the ATOMS Project describes is that “the context in which the device is used and the AT services obtained are covariates that can confound and even reverse the outcomes of AT interventions.” This assumption and others could be integrated into the course content to support the models presented.

There is also a long list of basic “discoveries.” These findings include main results of literature reviews regarding measuring outcomes, costs, legal issues, and satisfaction with device use. These findings could also be incorporated into the course content to support the further models presented and facilitate students’ understanding of the AT process and service delivery. The basic findings listed in the chart in this document might be enough depth for MIME students to obtain a general understanding and appreciation for the concepts. OTD students could further analyze these studies and apply the findings in their own case studies. In addition, these “discoveries” can guide both MIME and OTD students in designing their devices in terms of user satisfaction and cost, and choosing the most appropriate outcomes measures to evaluate their devices.


Abstract:

An abstract was not included for this source.

Summary and Significance:

This article provides an overview of the role of the professional of engineering in assistive technology. The chapter begins with a description of basic terminology including
assistive technology and rehabilitation engineering. A historical look at the role of engineering in assistive technology beginning in the 1900s is provided, followed by sections on principles of assistive technology assessment, human components, principles of rehabilitation engineering, and principles of rehabilitation engineering in assistive technology. The chapter concludes with content on professional opportunities for engineering in this area of practice, as well as a career outlook. Finally, there are sample exercises provided to help guide student’s understanding of the assessment and implementation process and develop problem-solving skills for assistive technology needs.

This information provided in this chapter pertaining specifically to the field of engineering can be used in lectures to complement similar information found for the profession of occupational therapy. The concepts in this chapter may be review for engineering students, but it could still be beneficial to for them to see these principles placed in the specific context of assistive technology practice. This type of information will help both engineering and occupational therapy students understand the role of engineers in the assistive technology process, as well as the general engineering perspective in terms of design and assessment principles. This will help students form their own professional identities on the interdisciplinary team, and well as to form accurate perceptions of each other’s professions. Accurate knowledge is needed to help students function optimally as a team in the course and as professionals in the future.

**Related Course Materials**


**Abstract:**
An abstract was not included for this source.

Summary and Significance:

This website provides an overview of the capstone component of the Seminar Approach to General Education and Scholarship (SAGES) at Case Western Reserve University (CWRU). The capstone experience is meant to allow students to move their skills beyond the classroom and into the “world of work” by actively applying their analytical and practical skills to a specific project. Specific capstone objectives are determined by each respective academic department, but there are a set of unifying objectives that apply to all departments. For example, each capstone must elicit students’ critical thinking skills, have clear goals and action plan, include regular supervision by a faculty mentor, submit periodic reporting of progress, and a public presentation.

This information is helpful in understanding the capstone and Senior Design requirements for engineering students at CWRU. These objectives might be compared against those of the MIME department at UT for the purpose of better understanding the structure of the senior design course for engineering students at UT. It might be helpful to reference the elements of the SAGES program in creating the current course to help ensure the highest level of quality in the project outcomes, although it should be reinforced that the SAGES program is carried out at CWRU and these are not requirements of UT.

Case Western Reserve University Mechanical and Aerospace Engineering Department. (2011). B.S. in mechanical engineering. Retrieved from:

http://engineering.case.edu/emae/undergraduate-program/mechanical.

Abstract:

An abstract was not included for this source.
Summary and Significance:

This document shows the course sequence for students pursuing a Bachelor’s Degree of Science in Mechanical Engineering from Case Western Reserve University (CWRU). From review, one can see that students participate in a Senior Design course during the final semester of study before graduation. This alludes to a type of project structure that is only one semester in length that is three credit hours. This structure is similar to the one employed by the UT MIME department, but differs from other schools that require a two course sequence spanning a full academic year. Additional resources should be sought to learn more about this program at CWRU and its relevance to the course under development for UT.

Also, faculty contact information can be found through this website that could lead to value insight into this program as a whole as well as the specific Senior Design course, specifically if there are opportunities for interdisciplinary collaboration.


Abstract:

An abstract was not included for this source.

Summary and Significance:

This resource was sought with the purpose to obtain more information about the Senior Project course at CWRU. Listed on this website are concise course descriptions for standard courses required of mechanical engineering students at CWRU. Only a brief and somewhat vague description of the Senior Project course is given, explaining that students can work individually or on a team with guidance from a faculty supervisor. Requirements include
periodically reporting progress and a final oral presentation accompanied with a written report. This description also states that this is an “approved SAGES capstone.” Further information should be sought about the natures of SAGES and its potential relevance to course under development.


**Abstract:**

An abstract was not included for this source.

**Summary and Significance:**

The curriculum guide for the Master’s of Occupational Therapy (MOT) program at Cleveland State University (CSU) was sought to obtain insight about potential opportunities available for interdisciplinary collaboration with the mechanical engineering undergraduate students at the same institution. After review, a few courses were found that could allude to such collaboration. One such course is a 2-credit hour course titled “Interdisciplinary Team Development.” There are also positions open for two elective courses to be taken during the program. Further details should be gathered pertaining to the nature of these courses and any other opportunities not overtly stated on the website.

Furthermore, one can find through this website contact information for faculty of this program. This information will be beneficial to inquire more about the MOT program at CSU and opportunities for interdisciplinary learning with the engineering students.
http://www.csuohio.edu/undergradcatalog/courses/courindex/mce.htm#MCE450.

Abstract:
An abstract was not included for this source.

Summary and Significance:
The course requirements for undergraduate mechanical engineering students at Cleveland State University show that there is a senior design requirement. The structure is a two-course sequence over a full academic year. Very brief course descriptions are given for these courses as well as genera course requirements. In Design Project I, students design a proposal to solve a particular engineering problem which is then implemented in Design Project II.

This shows an example of one’s school method of carrying out a senior design project course. This structure might be considered when designing the current course under development. Further information should be sought pertaining to opportunities for interprofessional collaboration with students of the occupational therapy program at CSU or current practitioners.


Abstract:
An abstract was not included for this source.
Summary and Significance:

This website lists the courses that are major requirements for undergraduate students studying mechanical engineering at Eastern Michigan University, as well as brief course descriptions for each. On this site, one can find brief descriptions of the two 3-credit hour courses that make up the Senior Project Design sequence which takes place in the last two semesters before graduation. In the first course, students work to define an engineering problem and develop a final design proposal to solve that problem. In the second course, students implement their chosen design. The descriptions of these courses are brief, but one can gain a general idea of the structure and course requirements. This shows one school’s example of a structure for senior design courses in the engineering field of study. Knowledge of various other successful capstone structures at other institutions will help to, if needed, develop a new structure or modify the existing structure of the engineering capstone semester at the current site, The University of Toledo.

One can also find on this website contact information for faculty in this academic department which could be helpful in further inquires about Senior Design Project requirements and, specifically, if there are opportunities for interdisciplinary collaboration.

Miami University Department of Mechanical and Manufacturing Engineering. (2007).

MME448-449: Senior Design Project General Advisor Guidelines.

Abstract:

“These guidelines document the process that all advisors should utilize when advising their student teams in our engineering design capstone: MME 448-449. It is another step in the process of continuous quality improvement of this capstone. The goals are to maintain consistency among all faculty advisors when advising and evaluating their teams, to maintain the
integrity of the capstone experience and results, to achieve the Miami Plan goals, and to achieve ABET outcomes and program outcomes.”

**Summary and Significance:**

This document is used by faculty members at Miami University who advise engineering student teams and their respective Senior Design projects. The Senior Design project spans one full academic year, or two semesters. The first course is dedicated to developing a design proposal to solve a given engineering problem, while in the second course; students will implement their chosen design proposal. These guidelines define the role of the faculty advisor in both courses, provide tips for successful advisement of teams, and list specific student requirements in each course.

This resource is helpful to review to better understand the role of faculty advisors on such teams and the general demands required of them through participation. This will help ensure that the current course under development is created as realistically as possible for the faculty at The University of Toledo who could potentially be involved. This document also provides one example of a structure for senior design courses in the engineering field of study. Knowledge of various other successful capstone structures at other institutions will help to, if needed, develop a new structure or modify the existing structure of the engineering capstone semester at the current site, The University of Toledo.


**Abstract:**

An abstract was not included for this source.
Summary and Significance:

In 1988, the National Science Foundation (NSF) established a grant program through the Bioengineering and Research to Aid the Disabled (BRAD) program of the Emerging Engineering Technologies Division of NSF. The intent of this program was, and continues to be, to provide engineering students at universities throughout the United States funding to construct custom devices for individuals with disabilities.

A publication is printed each year that describes the projects completed in the previous year that were funded by this effort. The goals of this publication are to enhance the quality of future student designs, encourage participation by faculty and students in this area of engineering, and ultimately assist individuals with disabilities reach their fullest function potential. The current source is the 2007 edition of this publication, describing projects completed in the 2006-2007 school year. Chapter 18 of this book describes all of the projects completed specifically at The University of Toledo during this year. Each project is described using the same format, starting with a non-technical description, a summary of the impact this project could have on the individual’s life, followed by a more detailed technical description. Photographs and/or drawings are also included as deemed necessary to show the entire device itself or important components of it.

Reviewing this source helps the reader to better understand important features of this program including its history and best practice guidelines. By reading about the different completed projects, one can gain insight into the type and scope of projects that this program supports, as well as the past work of University of Toledo engineering students. Analyzing these projects will help determine the possible role of occupational therapy students in the design and
construction of these devices and help guide the development of the structure of the
interprofessional collaboration.

National Science Foundation. (2008). *NSF 2008 engineering senior design projects to aid
persons with disabilities*. Mansfield Center, CN: Creative Learning Press, Inc.

Abstract:

An abstract was not included for this source.

Summary and Significance:

In 1988, the National Science Foundation (NSF) established a grant program through the
Bioengineering and Research to Aid the Disabled (BRAD) program of the Emerging
Engineering Technologies Division of NSF. The intent of this program was, and continues to be,
to provide engineering students at universities throughout the United States funding to construct
custom devices for individuals with disabilities.

A publication is printed each year that describes the projects completed in the previous
year that were funded by this effort with several goals in mind. These goals are to enhance the
quality of future student designs, encourage participation by faculty and students in this area of
engineering, and ultimately assist individuals with disabilities reach their fullest function
potential. The current source is the 2008 edition of this publication, describing projects
completed in the 2007-2008 school year. Chapter 14 of this book describes all of the projects
completed specifically at The University of Toledo during this year. Each project is described
using the same format, starting with a non-technical description, a summary of the impact this
project could have on the individual’s life, followed by a more detailed technical description.
Photographs and/or drawings are also included as deemed necessary to show the entire device
itself or important components of it.
Reviewing this source helps the reader to better understand important features of this program including its history and best practice guidelines. By reading about the different completed projects, one can gain insight into the type and scope of projects that this program supports, as well as the past work of University of Toledo engineering students. Analyzing these recent projects will help determine the possible role of occupational therapy students in the design and construction of these devices and help guide the development of the structure of the interprofessional collaboration.


**Abstract:**

An abstract was not included for this source.

**Summary and Significance:**

This resource provides a summary of the justification of need of this award written by principal investigator Dr. Hefzy of The University of Toledo. In this summary, Dr. Hefzy explains how this specific grant will allow MIME students at UT to design and build custom assistive devices for local members of the community identified by the Ability Center of Greater Toledo. He discusses the various potential intellectual merits to be achieved by students participating in this program, as well as the more global impacts of these projects that could be made possible by funding provided from the National Science Foundation. Also found on this website are the award amount and award start and expiration dates.

This information provides the reader with general information about this grant and its purposes for The University of Toledo MIME department. This is important information to
reference when designing the current course so that it is created within the funding currently available. The scope of projects should be within this amount, or additional funding will need to be identified and secured for successful implementation of the course at this institution.


**Abstract:**

An abstract was not included for this source.

**Summary and Significance:**

In 1988, the National Science Foundation (NSF) established a grant program through the Bioengineering and Research to Aid the Disabled (BRAD) program of the Emerging Engineering Technologies Division of NSF. The intent of this program was, and continues to be, to provide engineering students at universities throughout the United States funding to construct custom devices for individuals with disabilities.

A publication is printed each year that describes the projects completed in the previous year that were funded by this effort with several goals in mind. These goals are to enhance the quality of future student designs, encourage participation by faculty and students in this area of engineering, and ultimately assist individuals with disabilities reach their fullest function potential. The current source is the 2009 edition of this publication, describing projects completed in the 2008-2009 school year. Chapter 21 of this book describes all of the projects completed specifically at The University of Toledo during this year. Each project is described using the same format, starting with a non-technical description, a summary of the impact this project could have on the individual’s life, followed by a more detailed technical description.
Photographs and/or drawings are also included as deemed necessary to show the entire device itself or important components of it.

Reviewing this source helps the reader to better understand important features of this program including its history and best practice guidelines. By reading about the different completed projects, one can gain insight into the type and scope of projects that this program supports, as well as the past work of University of Toledo engineering students. Analyzing these recent projects will help determine the possible role of occupational therapy students in the design and construction of these devices and help guide the development of the structure of the interprofessional collaboration.


**Abstract:**

An abstract was not included for this source.

**Summary and Significance:**

These guidelines explain the details of the award relevant to the UT MIME department Senior Design course and the requirements of recipients in order to attain the funding. Topics covered include, but are not limited to, grantee responsibilities, award extensions, travel, project reporting requirements, responsible conduct of research, site visits, auditing and records, and liability.

This is very important information to reference when considering the development of the current course. It is vital to abide to these guidelines in order to secure the receipt of funds that in large part make these projects possible. It will be important for involved faculty of the UT
occupational therapy department to be aware of these guidelines as they could potentially be involved in the application and/or reporting process.


Abstract:

An abstract was not included for this source.

Summary and Significance:

This resource was obtained through personal communication with Dr. Carmen DiGiovine, assistant professor in the Master’s of Occupational Therapy program at The Ohio State University (OSU). It is the PowerPoint lecture slides for the first lecture of the second of third course Master’s of Occupational Therapy (MOT) students take if pursuing the Research Specialization in Rehabilitation Engineering certificate at OSU. The lecture describes the assignments due throughout the quarter, student roles, and a monthly timeline to monitor progress. Also discussed is a five step design process, issues of intellectual property, and guidelines for team meetings and how they should be carried out.

This is a very valuable resource to review as it provides an example of the structure and content of a course similar to the one in development for UT. As this is the second of three courses taken by students at OSU, the reader should be sure to recognize the context of this course and that it does not represent the of the certificate program in its entirety. Ideas for course progression, content, and structure can be obtained from review of this resource; however, care should be taken to ensure that the course in development for UT is tailored to meet desires of that institution specifically.

The Ohio State University. (n.d.). Tentative schedule for rehab engineering winter 2011.

Abstract:
Summary and Significance:

This resource was obtained through personal communication with Dr. Carmen DiGiovine, assistant professor in the Master’s of Occupational Therapy program at OSU. It represents the course schedule for the second of three courses in the Research Specialization in Rehabilitation Engineering certificate program available for MOT students at OSU. This course schedule is targeted for both MOT and engineering students. Lecture topics are given for each week of the course with specific due dates for assignments. This course consists mainly of teams scheduling weekly meetings with faculty mentors. Lecture content is very minimal. By the end of this course, teams will evaluate their designs and present their findings through oral and written presentations. They will also participate in various open-house events to disseminate their work.

This is a very beneficial form to reference in formulating the structure and content for the course under development for UT. One should be reminded that this course schedule is for the second of three courses of OSUs rehab engineering certificate program and it does not represent the certificate in its entirety. Since OSU and UT are on two separate academic schedules (quarters versus semesters), the reader should reference this document for overall structure and content and not necessarily for a course timeline.

The Ohio State University. (n.d.). Tentative schedule for rehab engineering winter 2011.

Abstract:

An abstract was not included for this source.
Summary and Significance:

This resource was obtained through personal communication with Dr. Carmen DiGiovine, assistant professor in the Master’s of Occupational Therapy program at OSU. It represents the course schedule for the second of three courses in the Research Specialization in Rehabilitation Engineering certificate program available for MOT students at OSU. This course schedule is targeted for both MOT and engineering students. Lecture topics are given for each week of the course with specific due dates for assignments. This course consists mainly of teams scheduling weekly meetings with faculty mentors. Lecture content is very minimal. By the end of this course, students will have drawn numerous sketches for possible designs, created 3 prototypes, complete 2 site visits, and present on one final detailed design.

This is a very beneficial form to reference in formulating the structure and content for the course under development for UT. One should be reminded that this course schedule is for the second of three courses of OSUs rehab engineering certificate program and it does not represent the certificate in its entirety. Since OSU and UT are on two separate academic schedules (quarters versus semesters), the reader should reference this document for overall structure and content and not necessarily for a course timeline.

The Ohio State University Department of Occupational Therapy. (n.d.). Research specialization in rehabilitation engineering.

Abstract:

An abstract was not included for this source.

Summary and Significance:

This resource was obtained through personal communication with Dr. Carmen DiGiovine, assistant professor in the Master’s of Occupational Therapy program at OSU. It
describes the Research Specialization in Rehabilitation Engineering certificate that Master’s of Occupational Therapy (MOT) students can obtain during their studies at OSU. This first part of the form shows the course sequence of the program, as well as criteria for participation, goals of the specialization, and specific learner outcomes. The following sections described in more detail the role of the MOT student as a team consultant, meeting requirements, and assignment descriptions.

This document provides an overview of one interprofessional program much like the one under development for UT. Given that OSU’s research specialization program is actually functioning and considered successful, this is a very beneficial resource to refer to for ideas for the current course under development. Since OSU and UT are on two separate academic schedules (quarters versus semesters), the reader should reference this document for overall structure and content and not necessarily for a course timeline. While awareness of OSU’s program may be useful to spur ideas for content and structure, caution should be taken not to plagiarize this work that has already been done. It will be important to take ensure that the IPE course for UT is developed so that it sufficiently meets the needs and interests of the target population, namely UT as an entire institution as well as the faculty, administrators, and students of the OT and MIME departments.

The Ohio State University Department of Mechanical Engineering. (n.d.). Tentative course schedule: ME 565.01.

Abstract:

An abstract was not included for this source.
Summary and Significance:

This resource was obtained through personal communication with Dr. Carmen DiGiovine, assistant professor in the Master’s of Occupational Therapy program at OSU. It shows the autumn quarter capstone course schedule for undergraduate mechanical engineering students at OSU. Each class session’s topic is given, as well as due dates of homework assignments. Lecture topics include an overview of the design process, oral and written communication principles, defining engineering problems, and project management.

It is beneficial to understand the requirements for engineering students of this program to have a more complete understanding of the entire rehab engineering certificate program and each student’s roles. This course schedule will be useful to the current capstone project by comparing it against the course schedule for the UT engineering capstone course. Similarities and differences in course topics and assignments might be identified. Elements that differ between the two courses might be further investigated in deciding which elements are important to include for the UT engineering students given their respective capstone requirements. Caution should be taken when referencing this document in the current capstone project since it represents the first of three courses (spanning a full academic year), whereas the engineering students at UT participate in only one semester-long course.


Abstract:

An abstract was not included for this source.
Summary and Significance:
This resource is essential to understanding course topics and curricular sequence. This information will help determine the content to be included in this capstone course. Understanding the content areas covered in each course is vital to preventing unnecessary overlap or repetition and highlighting what areas could benefit from more focus. Referring to these course descriptions will also help determine how to make this capstone course relate to and fit in with the existing program curriculum and identify its optimal placement in the course sequence.


Abstract:
An abstract was not included for this source.

Summary and Significance:
The Program Curriculum Sequence for the OTD program at UT shows the sequence of courses in the OTD program by semester, including course numbers and course titles. This resource will be very beneficial to refer to when determining how this capstone course could fit into the already established curriculum at this educational program. In particular, this document will help determine the best place for this capstone course in terms of course topic, pre-requisite courses and/or skills required, and course load for given semesters.

Abstract:

An abstract was not included for this source.

Summary and Significance:

This website is the homepage for the occupational therapy department at Thomas Jefferson University in Philadelphia, Pennsylvania. On this page, one can find a description of the program with highlights unique to Thomas Jefferson University. One of these key elements is opportunities for interprofessional education. Also found on this site is contact information for faculty members in this department.

Thomas Jefferson University has a highly ranked occupational therapy program, so it could be valuable to contact faculty in hopes of learning more about the interprofessional opportunities available for occupational therapy students, specifically if any of these opportunities allow for collaboration with engineering students.


Abstract:

An abstract was not included for this source.

Summary and Significance:

This website was sought to gain insight into the engineering major requirements for undergraduate students at the University of Michigan (UM). After review, this institution appears to require a similar type of senior design course(s) as other schools have been found to require. At UM, this is called a senior level independent study/research course, but it seems to have similar requirements as the “Senior Design” courses found at other schools such as Case Western Reserve University, Eastern Michigan University, and The University of Toledo. Further
information should be gathered pertaining to more specific course requirements for UM students to learn about possible course structures and modifications for the engineering Senior Design course at UT.

One can also find on this website contact information for the mechanical engineering department at UM through which to inquire about details of this program, the independent study/research course specifically, and if interdisciplinary collaboration is incorporated in this course.