**Fitchburg State University**

**EDUCATOR Programs**

**Comprehensive Syllabus**

Winter 2018

**Creating Assistive Technology Solutions in Minutes**

## 

## 40 professional development clock hours / 3 Graduate Credit hours

**Instructor: Therese Willkomm, PhD, ATP**

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1. **COURSE DESCRIPTION:**

Individuals who experience a vision loss and other disabilities need a variety of assistive technology solutions, and today over 80% of these solutions can be created in five minutes or less using everyday tools and materials.  This amazing hands-on online learning course will inspire you to think creatively outside the box and will challenge you to use an assortment of materials to create solutions in minutes.  The course is based on the book – *Assistive Technology Solutions in Minutes – Book 2 – Ordinary Items, Extraordinary Solutions*. And hundreds of New How to Video clips of new inventions and creations by Dr. Willkomm. You will use an assortment of the tools and materials described in the book and on video clips and will fabricate solutions, and share your solutions with others in the class by posting pictures and video clips.  You will learn by watching clips, following step-by-step instructions and working with the materials.  Research shows that skill acquisition is achieved when participants actually use materials through hands-on kinesthetic learning.  Each learning module is based on chapters in the book.  Students will take a test at the end of each module and will post pictures and video clips that demonstrate skill acquisition throughout the course.

In addition, the richness of the course will also be in the sharing of your ideas and creations with fellow classmates so that you can learn from each other and challenge each other to create solutions for individuals with disabilities.

***If you plan on matriculating into a graduate program at Fitchburg State University, please be aware that twelve semester hours of Fitchburg State University credit taken within a year prior to the student’s admission may be applied to the degree program with the approval of the program chairperson. Anything over 12 credits prior to matriculation will NOT be accepted towards the degree.***

1. **TEXTS:**

*Assistive Technology Solutions in Minutes Book 2 – Ordinary Items, Extraordinary Solutions* (2013). Therese Willkomm, PhD, ATP

Fitchburg State University Teacher Preparation Programs. (2012).  *Conceptual framework.*  Fitchburg, MA: Author. [Online] Available: http://www.fitchburgstate.edu/offices/academic-offices/education-unit/conceptual-framework/

Massachusetts Department of Elementary and Secondary Education. (1999-2011). *Curriculum frameworks*. Malden, MA: Author. [Online] Available: <http://www.doe.mass.edu/frameworks/current.html>

**Fitchburg State University Teacher Education Conceptual Framework**



1. **LEARNING OUTCOMES / OBJECTIVES:**

State precisely what the students will learn by taking this course. In later sections the syllabus should clearly indicate how course assignments and your assessment of them are linked to these course goals. In this section highlight both the **Professional Association Goals** for this course and **specific State Licensure and Professional Standards for Teachers** and label with an agreed format., if applicable.

This course will address the dispositions of the Conceptual Framework in the following way(s):

**Knowledge**: As a result of the learning experiences in the course, you will become more cognizant of:

* How to use ordinary items to create extraordinary assistive technology solutions for individuals with visual impairments and multiple disabilities.

**Skill**: As a result of the learning experiences in the course, you will become better able to:

* Fabricate assistive technology solutions in minutes using ordinary items and creative thinking.

**Caring**: As a result of the learning experiences in the course, you will become more competent in your ability to:

* Create solutions for problems experienced by individuals with visual impairments and multiple disabilities.

**Ethical**: As a result of the learning experiences in the course, you will become more competent in your ability to:

* Understand the importance of trial and error in problem solving.
* Understand the limitations of tools and materials selected.
* Use materials that save time and money.

1. **INSTRUCTIONAL STRATEGIES [Place an X for each strategy you use while teaching this course.]**

x Lecture Data Collection and Analysis

x Discussion/Questioning Pre-Practicum

x Laboratory Role Playing/Simulation

x Problem Finding/Solving x Independent Learning

x Discovery Field Trips

Interviewing Computer Applications

Collaborative Learning Groups x Viewing or Listening to Followed by

Reflective Responses Discussing

x Creating Visual Illustrations of Concepts Other\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Technology Initiatives**:

Users of the Fitchburg State University computer systems are subject to all applicable federal, state, and international computer laws. Questions regarding regulations may be directed to the office of Information Technology Systems.

Candidates will utilize technology as:

* A way to access the course.
* A communication method.
* A research method.
* A way to document and share ideas and projects through the use of items such as a cell phone camera, iPAD, or Web cam to capture still images and videos of solutions fabricated to post on-line in order to measure skill acquisition,
* A way to watch videos and lectures and post pictures and you tube clips for others to watch.

1. **COURSE REQUIREMENTS:**

* Quizzes: There will be a quiz at the end of each week to assess your understanding of the topic. The quiz will consist of multiple choice and true/false questions. The questions will be based on content in the book and the on-line lectures.
* Assignments: There will be an assignment for each module. Participants will construct an assistive technology solution and post a photo of their solution online. Participants will also respond to questions or comments and post questions and comments to other participant solutions.
* Final Project: There will be a final project. Participants will design an assistive technology solution for to meet the needs of a specific student. Participants will provide an explanations for the purpose of the solution as well as what materials were chosen and why.
* Feedback Assignment: Participants will post feedback to 3 other final projects

Late assignments: 1 point will be subtracted from the grade for each day an assignment is late.

1. **FIELD-BASED REQUIREMENTS:**

n/a.

# **EVALUATION OR GRADING POLICY:**

* 35% of grade will be based on the performance on the quiz for each learning module.
* 35% of grade will be on assignments related to each module.
* 20% of grade will be a final project worth 20 points.
* 10% of the grade will be feedback to other participant’s final project.

**FITCHBURG STATE UNIVERSITY**

**GRADUATE GRADING SYSTEM**

**4.0** 95 - 100 A

**3.7** 92 - 94 A-

**3.5** 89 - 91 A-/B+

**3.3** 86 - 88 B+

**3.0** 83 - 85 B

**2.7** 80 - 82 B-

**2.5** 77 - 79 B-/C+

**2.3** 74 - 76 C+

**2.0** 71 - 73 C

**0.0**  0 - 70 F

**W** Withdrawn

**IN** Incomplete

**IP** In-Progress

Grades that fall between intervals will be rounded to the higher number.

1. **RUBRICS**

* Module Assignments: 5 points can be earned for each of 7 weekly assignments. Points are awarded as follows:
  + fabricate an assistive technology solution (3 pts.)
  + document the solution using a camera and posting the photo on line (1 pt.)
  + respond to assigned questions (1 pt.)
* Final Project: 20 points can be earned for the final project. Points are awarded as follows:
  + 1 point for discussing the functional limitations associated with the individual selected;
  + 1 point for discussing the specific task that needs to be accomplished;
  + 2 points for discussing what solutions are currently available;
  + 2 points for discussing why you decided to fabricate something from scratch;
  + 2 points for selecting the correct materials to fabricate the solutions;
  + 2 points for selecting the correct tools;
  + 2 points for critiquing your work and discussing time and challenges;
  + 2 points for making suggestions or recommendations for improvement;
  + 2 points for demonstrating that the solution works;
  + 2 points for getting a comment from the person who used the solutions; and
  + 1 point for your paper listing the above information and
  + 1 point for listing references and resources that you used including websites, cost of materials, and time spent.
* Feedback Assignment: 10 points can be earned for the feedback assignment. Post feedback to 3 other final projects. Be sure to comment on the following:
  + What do you like about the project (3 pts.)
  + Suggestions for other options/ways to create or improve the project ( 4 pts.)
  + Your thoughts on the usefulness of the project (3 pts.)

1. **COURSE CONTENT / TOPICAL OUTLINE**

**Module 1 – Overview of Using Ordinary Items to Create Extraordinary Assistive Technology Solutions**

* View on-line lecture
* Reading Assignment – Read Chapter 2 and 3 Text
* On-Line Assignment: Find one ordinary item at your home, in your school or community that could be used to create an assistive technology solution for someone who has a visual impairment or a multiple disability. Take a picture of the item, post the picture on line under assignments and in the discussion forum and tell us the correct name of the item, what it is used for, where you found it, and the approximate cost. Describe what it could be used for to overcome what type of functional limitation, or to perform what specific task at home, school, work or play.
* Take Test on Module 1.

**Module 2 – Amazing Tapes and Adhesives for Creating Amazing AT solutions**

* View on-line lecture
* Reading Assignment – Read Chapter 4 in text
* Watch Video on using Hook and Loop.
* Watch Video clips on various projects that you can make with adhesive and tapes.
* On-Line Assignment: Using the materials kit: Make anything that you see in the book or in any of the additional projects that you have seen. Such as a universal cuff, a Cup holder, cane holder etc. Post the picture in the discussion board and write a paragraph including the name of the solution you created; how it works; what were the tools and materials that you used in making the solutions and suggestions for improvements. Also make one comment or suggestion on other student’s postings. Providing feedback and suggestions to others in this on line class helps everyone.
* Take Test on Module 2

**Module 3 – Working with Putty and Instamorph**

* View on-line lecture.
* Reading Assignment – Read Chapter 5
* View video clips of projects made with Instamorph
* On-Line Assignment. Create one solution using Instamorph. Post the picture in the discussion board and write a paragraph including the name of the solution you created; how it works; what were the tools and materials that you used in making the solutions and suggestions for improvements. Also make one comment or suggestion on other student’s postings
* Take Test on Module 3

**Module 4 -  101 Solutions You Can Make with Corrugated Plastic, Corner Guard and Sintra Board**

* View on-line lecture
* Reading Assignment – Read Chapter 6 in text
* Watch video clips on new projects made with corrugated plastics, corner guard and Sintra Board.
* On-Line Assignment: Fabricate one solution using Corrugated plastics solution such as an Eileen , a portable Scan and Read station, QR scanner for someone with a vision impairment; a Book holder/Slant Board, light box, a spring clip. Post the picture in the discussion board and write a paragraph including the name of the solution you created; how it works; what were the tools and materials that you used in making the solutions and suggestions for improvements. Also make one comment or suggestion on other student’s postings
* Take Test on Module 4

**Module 5 -  Unlocking the Mysteries of Loc-Line**

* View on-line lecture
* Reading Assignment – Read Chapter 9 and Chapter 12 in text
* View additional video clips of projects made using Loc-Line
* On-Line Assignment: Fabricate one solution using Loc-Line. Such as a switch mount, iPAD holder, cup holders, scan a read station, etc. Post the picture in the discussion board and write a paragraph including the name of the solution you created; how it works; what were the tools and materials that you used in making the solutions and suggestions for improvements. Also make one comment or suggestion on other student’s postings..
* Take Test for Module 5

**Module 6 – Working with PVC**

* View on-line lecture
* Reading Assignment – Read Chapters 7 and 8
* View new projects made with PVC.
* On-Line Assignment: Fabricate one solution using PVC. Post the picture in the discussion board and write a paragraph including the name of the solution you created; how it works; what were the tools and materials that you used in making the solutions and suggestions for improvements. Also make one comment or suggestion on other student’s posting.
* Take Test for Module 6

**Module 7 -  The Amazing Industrial Twist tie**

* View on-line lecture
* Reading Assignment – Read 10 in text
* Watch additional video clip on other projects that can be made using an industrial twist tie.
* On-Line Assignment: Fabricate one solution using an industrial twist tie. Post the picture in the discussion board and write a paragraph including the name of the solution you created; how it works; what were the tools and materials that you used in making the solutions and suggestions for improvements. Also make one comment or suggestion on other student’s postings;
* Make a Tactile overlay using Foamie and Polyester Mylar.
* Take Test for Module 7

**Module 8 – Creating a Solutions for Someone with Disability**

* View on-line lecture
* Identify someone who needs an assistive technology solutions.
* Research what solutions are available
* Select a solution to make
* Make the solution . Take a picture of the solution and post it in the discussion section and provide details on how you made the solutions; tools and materials used; critique your work and make suggestions for improvements. Also make three comments or suggestion on other student’s postings

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| --- | --- | --- | --- | --- |
| Session | Topic | Assignments Due | Possible Points | Due Date |
| 1 | Overview of Using Ordinary items… | Assignment 1: Plus Make a Comment or offer suggestions on other classmate’s postings | 5 | 7/5/2016 |
| Quiz 1 | 5 |
| 2 | Amazing Tapes and Adhesive | Assignment 2 - Plus Make a Comment or offer suggestions on other classmate’s postings | 5 | 7/10/2016 |
| Quiz 2 | 5 |
| 3 | Working with Instamorph | Assignment 3 Plus Make a Comment or offer suggestions on other classmate’s postings | 5 | 7/17/2016 |
| Quiz 3 | 5 |
| 4 | … Corrugated plastic, Corner Guard, and Sintra Board | Assignment 4 Plus Make a Comment or offer suggestions on other classmate’s postings | 5 | 7/242016 |
| Quiz 4 | 5 |
| 5 | Unlocking the mysteries of Loc-Line | Assignment 5 Plus Make a Comment or offer suggestions on other classmate’s postings | 5 | 7/31/2016 |
| Quiz 5 | 5 |
| 6 | Working with PVC, | Assignment 6 Plus Make a Comment or offer suggestions on other classmate’s postings | 5 | 8/7/2016 |
| Quiz 6 | 5 |
| 7 | The Amazing Industrial Twist Tie | Assignment7 Plus Make a Comment or offer suggestions on other classmate’s postings | 5 | 8/14/2016 |
| Quiz 7 | 5 |
| 8 | Final Project – Creating a Solution | Assignment 8 – Final Project | 20 | 8/21/2016 |
| Make a Comment or offer suggestions on other classmate’s postings. | 10 |
| **Total Points you can Earn for the course** | **100** |

**Fitchburg State University** encourages all Extended Campus students to take advantage of our online student services. We have created a “virtual student center” just for you. Here you will find access to Counseling Services, Career Services, The Student Activity Center, the university bookstore and many other helpful links. You can access our student center by going to the university homepage at <http://www.fitchburgstate.edu> and clicking on Offices and Services. Scroll down and click on Extended Campus Center. You will find links to Library Services, our Virtual Student Center and other important information.

**FITCHBURG STATE UNIVERSITY**

**DISTANCE LEARNING & EXTENDED CAMPUS LIBRARY SERVICES**

The Gallucci-Cirio Library at Fitchburg State University provides a full range of library services including borrowing privileges; document delivery (books and articles mailed to your home); Interlibrary Loan; reference assistance via: phone, email, IM, Blackboard’s Collaborate tools, Skype and in-person; library instruction via online and in-person at extended campus sites; research help and more. Any questions relating to library services should be directed to the E-Learning & Instruction Librarian, at 978-665-3062 or [dllibrary@fitchburgstate.edu](mailto:dllibrary@fitchburgstate.edu). There is also a special section for Distance Learning and Extended Campus Services at <http://fitchburgstate.libguides.com/dlservices> outlining the wide range of services available to you and how to access them.  Activate your library account online through our ILLiad system at <https://fitchburgstate.illiad.oclc.org/illiad>; from here you can access article, book, and media. request forms to get items from our library and from other libraries. If you haven't used ILLiad before, you will need to click on the "First Time User? Create Your Account" link and set up your account.

Students who are currently registered with the university may access any of the library’s subscription databases, including an increasing number with full-text, by visiting the Gallucci-Cirio Library’s homepage at <http://www.fitchburgstate.edu/academics/library> and clicking on the Research Databases button in the center of the page. Select the resource you want to access from the alphabetical or subject listing. Once you click on the database title you will be prompted for your Falcon Key logon information; this is the same logon you will use for your Fitchburg State email account and if you have any online Blackboard courses. If you do not know your Falcon Key username and password or if you have any problems logging in, contact the university’s Technology Help Desk at 978-665-4500 or [helpdesk@fitchburgstate.edu](mailto:helpdesk@fitchburgstate.edu). The Library can issue you a temporary guest login to access the library's databases while the Technology Department is setting up your account: contact us at 978-665-3062 or [dllibrary@fitchburgstate.edu](mailto:dllibrary@fitchburgstate.edu)

All registered Fitchburg State University students are eligible for a Fitchburg State University OneCard ID which also serves as his/her library card. If you have not received your OneCard yet, you can still access all of our online services as long as you have activated your library account through ILLiad. After activation by the Gallucci-Cirio Library and receipt of your OneCard, students may access participating Massachusetts State College/University Libraries and you may request an ARC Card to access participating libraries in the Academic and Research Collaborative (ARC) during the current semester. OneCards are available on campus all year round.  Students wanting a OneCard must either complete the online Extended Campus OneCard request form at <http://www.fitchburgstate.edu/offices/technology/onecard/> or present a course registration confirmation at the One Card Office in the Anthony Building of the main campus. Please call 978-665-3039 for available times or if you have any questions about your One Card.

**UNIVERSITY AND EDUCATION UNIT POLICIES**

**Attendance and Participation**

1. As an emerging professional, you are expected to attend every class session, to be on time, and to communicate with the instructor regarding any absences. Absences and tardiness may result in a permanent grade change.
2. Participation in class discussions and cooperative groups is expected. All participants are responsible for meeting required deadlines on projects and assignments; your ability to complete tasks in a timely fashion demonstrates professional maturity and an ability to organize and manage time. Completion of assigned reading is imperative to your individual development as a professional.
3. All of these behaviors regarding attendance, preparation, and meeting deadlines are critical for successful teaching and thus are factored into the final grade.

# **Grade Appeal**

If you disagree with the evaluation of your work or believe an improper grade has been assigned, an appeal may be followed. Please discuss the matter with the instructor and refer to the Fitchburg State University Grade Appeal Policy in your Student Handbook.

# **Academic Integrity Policy**

The faculty in the Education Unit at Fitchburg State University that work submitted in fulfillment of course requirements will be solely that of the individual candidate and all other sources will be cited appropriately. University Academic Integrity Policy, as outlined in the University Catalogue, will be strictly adhered to.

# **Copyright Policy**

You are reminded that, in preparing handouts for peers or the instructor, reproduction of copyrighted material without permission of the copyright owner is illegal. Such unauthorized copying may violate the rights of the author or publisher. Fitchburg State University adheres to federal laws regarding use of copyrighted materials. See the Student Handbook for more details.

### Required Readings, Resources, Tools, and Materials

Text: Assistive Technology Solutions in Minutes – Book 2 – Ordinary Items, Extraordinary Solutions – By Therese Willkomm available at these three locations:

IODBookstore:- <http://www.iodbookstore.org/products/Assistive-Technology-Solutions-in-Minutes-II%3A-Ordinary-Items%2C-Extraordinary-Solutions.html>

Amazon.com: <http://www.amazon.com/Assistive-Technology-Solutions-Minutes-Book/dp/0989326209>

Shop REM.com: <http://rem.crotchedmountain.org/Assistive-Technology-Solutions-in-Minutes-Book-II-_p_1289.html>

**The following is a list of suggested tools that you must purchase to complete the projects.**

12” Ruler

Scissors

Utility Knife or Box Cutter

Klever Cutter or Coroclaw – Alternative, you can make all cuts using a utility Knife

Ratcheting PVC Cutter – Alternative – some people who don’t have a ratcheting PVC cutter, cut PVC with a Hack saw.

¾ “ Loc-Line Pliers – Alternative – some people who don’t want to purchase a Loc-Line pliers, with run the female socket end of the loc-line under hot water causing the plastic to expand a little and then they force the cold male end into the socket.

You can purchase all tools at a local hardware store with exception of the Loc-Line Plier and ratcheting PVC Cutter and Coroclaw. You can Google it to see places that sell these tools and can purchase them on-line.