Gerontechnology I
Fall 2015
Tuesdays 12:00 – 2:40

Course Instructors

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Course Web Page

The class web page is available at http://eecs.wsu.edu/~cook/gt1. Most of the class materials are available online, including the syllabus, homework assignments, papers, and lecture materials. Instructional materials can be accessed at this web page.

Catalog Course Description

Psych 485 / CptS 485 Gerontechnology I 3 Course Prerequisite: Certified in major or consent of instructor.

Required Instructional Material

Given that this is an emerging area of study, there are no available textbooks that fully cover the integrated aspects of the course material. Instead, students will be reading original research articles as well as book chapters to develop both breadth and depth in the subject matter of gerontechnology. A list of reading materials that may be updated to include additional readings can be found at the end of the course syllabus. There are a few Gerontechnology books that are available as optional resources, these are listed at the end of the syllabus as well.

Course Overview

In this class, we will introduce the principles of Gerontechnology, an interdisciplinary field that combines gerontology and technology. The class will consist of lectures, group discussion, guest presentations, an experiential component working with older adults, and a multi-disciplinary research project. It is assumed that students enrolled in Gerontechnology I will also register and complete the follow-on class in the spring, Gerontechnology II. Following completion of this course, students should (1) have an understanding of the major topics of research in gerontechnology, (2) have a basic understanding of the aging process and research methodology in aging, which will provide the foundation for development of assistive technologies, (3) have a working knowledge of basic technologies that are used to monitor, assess and assist the health of older adults, and (4) have gained experience working with older adults and in multi-disciplinary research teams.
Specific Course Learning Outcomes and Assessments

Because this class includes aspects of scientifically-validated psychological testing and an introduction to engineering methods for data collection, analysis, and design of health-assistive tools, it provides a unique opportunity to strengthen skills in each of the WSU Seven Learning Goals and Outcomes: 1) Critical and Creative Thinking, 2) Quantitative Reasoning, 3) Scientific Literacy, 4) Information Literacy, 5) Communication, 6) Diversity, and 7) Depth, Breadth, and Integration of Learning. The methods and measures for each goal is summarized in the table.

<table>
<thead>
<tr>
<th>WSU Learning Outcome</th>
<th>Goal (by end of course)</th>
<th>Course topics that address the learning outcome</th>
<th>Evaluation</th>
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</table>
| **Critical and Creative Thinking** | Assess the accuracy and validity of presented study results, define strategy to address posed challenges related to aging                                                                                     | • Research methodology in aging  
• Human factors  
• Ethics, acceptance                                                                 | • Quiz  
• Paper  
• Poster                                          |
| **Quantitative Reasoning** | Grasp properties involved in psychological assessment; grasp methods of sensor-based data collection and analysis                                                                                             | • Sensors  
• Smart environments  
• Research methods                                                                 | Homework assignment  
• Paper  
• Poster                                        |
| **Scientific Literacy** | Identify issues related to aging, be aware of and understand state-of-the-art research in gerontechnology                                                                                               | • Aging and: senses, health care, mobility, cognition, everyday function  
• Guest lectures on current research                                                                 | Guest lecture summaries  
• Quiz  
• Paper  
• Poster                          |
| **Information Literacy** | Be able to access and utilize literary resources to understand a gerontechnology challenge                                                                                                               | • Research methods                                                                                           | Paper  
• Poster                                      |
| **Communication** | Present the results of a research project orally and in writing                                                                                                                                                | • Research project                                                                                           | Paper  
• Poster                                      |
| **Diversity** | Be aware of ethical issues related to gerontechnology; understand diversity of cultures in views on aging                                                                                               | • Ethics  
• Service learning  
• Field trips                                                                                           | Service learning report  
• Quiz                                          |
| **Depth, Breadth, and Integration of Learning** | Understand issues related to practical application of technologies to address issues in aging                                                                                                                | • Guest lectures on current research  
• Multi-disciplinary research project                                                             | Guest lecture summaries  
• Quiz  
• Paper  
• Poster                                    |
Course Requirements

(1) *Service Learning Project (20%).* You will spend 6 hours working with older adults in the community and/or observing therapists in a formal care setting. You will be required to write a paper about your experiences (detailed below).

(2) *Summaries of Guest Speakers (25%).* We will bring in four experts this semester who will talk about state of the art research in gerontechnology and their experiences in clinical application of the technologies. You will be required to write a two-page discussion of each of these invited talks that are due at the beginning of the next class period. The write-up will include
   a) a summary of the talk
   b) a discussion of how the work fits within the context of the materials being discussed in class - you must include references to at least two articles that you have read for class as well as discuss class materials
   c) your ideas about how the speaker’s work could be extended in the future

(3) *Homework Assignment (10%).* You will be given one homework assignment to complete. This assignment will involve collecting and analyzing smartphone data while performing your own normal and scripted activities. *The completed homework assignment should be emailed to cook@eecs.wsu.edu by 9am on the due date.*

(4) *Research Project (40%).* Throughout the Gerontechnology I class (and Gerontechnology II class), you will contribute to an ongoing multi-disciplinary gerontechnology research project. You will present your project to the class, including study hypothesis and methods and receive feedback (project presentation dates: 11/10 and 11/17). You will also present a poster at the end of the semester (12/8) highlighting the project and your contributions and discuss your research results with visitors at the poster session.

(5) *Class Participation (5%).* You will be encouraged to ask questions, and expected to participate in class discussions.
Research Project

One of the requirements for this class is that you contribute to a research project focused on applying technology to one of the health challenges discussed in this class. Faculty, researchers, and graduate students will visit the class to describe ongoing research studies and you will have an opportunity to choose one of the projects on which you will work. Each of the projects is multidisciplinary, combining ideas and expertise from Psychology, Engineering, and Computer Science. Due dates related to the project are listed below.

- September 1-15: Faculty, researchers, and graduate students will visit class to describe ongoing research projects to which you may contribute.
- September 22: Send email with your top two choices for research projects by 9am to acrandal@wsu.edu.
- September 29 – December 15: Spend a minimum of 6 hours each week contributing to research project. Meeting times with graduate mentors and instructors to discuss your project are integrated into the class schedule during this time.
- November 10 / November 17: Present your project proposal and plan to the class in order to receive feedback and suggestions from the instructors and from the class.
- December 3: Email a pdf file containing a 36”x48” poster highlighting details of your research work to acrandal@wsu.edu by 9am. The poster will be printed and displayed for the poster session.
- December 8: Poster session. Discuss the research project, your contribution, your plans for ongoing work to visitors at the class poster session.

**IMPORTANT: CITI Training:** Before you begin work on your research project you will need to complete the CITI ethics training and email your completed certificate to Thao Vo at thao.vo@wsu.edu

Accessing and Completing the CITI Course

1. On a web browser, go to [www.citiprogram.org](http://www.citiprogram.org)
2. CITI Login and Registration
   - Click on "New Users Register Here"
3. Course Registration
   - Select your institution or organization: Click on the right-hand arrow for a drop-down list for "Participating Institutions" and select Washington State University.
   - If you select anything other than Washington State University, your certificate of completion will not be sent to the WSU IRB.
   - Select your Username and Password:
     - Remember to SAVE your username and password for re-entering the course to complete modules, take additional training and/or to print additional certificates.
     - Enter your name
     - Enter your email address
4. Select Curriculum - Washington State University
Question 1: Select the Basic Course "Social and Behavioral Research Investigators" or "Biomedical Research" to satisfy CITI training requirements for WSU IRB. **Note:** These are the only courses that satisfy the WSU IRB training requirement. All other courses are considered supplemental, are optional, and will not be tracked by the ORA.

Question 2: Select **"I have not completed the Basic Course."**

- If you completed the Basic Course and would like to take the Refresher Course, select "Social and Behavioral Research Investigators."

Question 3: Select only if needed.

Question 4: Select only if needed.

5. Select your institution or organization

   - If Washington State University is chosen, check "No" to continue.

6. Learner's Menu

   - Select "Enter" under My Courses to begin training.
   - Complete the eight (8) required modules to satisfy CITI training requirement for WSU IRB.

7. Upon completion of the required modules, print the course "Completion Report" for your records. Also, attach "Completion Report" to your application.
**WSU Service Learning Project**

You will be required to complete 6 hours working with older adults in the real world, or observing health care professionals working with older adults. A staff member from the Center of Civic Engagement will come to class on September 1 to discuss placements that are available through their office and procedures for enrolling through their office. You may also seek out alternate placements with professionals in the community. The goal of the placement is to provide you with an opportunity to observe some of the issues faced by older adults with disabilities in the real world, to assist you in learning about the types of strategies and assistive technologies that the older individuals may using, and to spark potential ideas for better design development and assistive technologies. Details of the service learning steps are available online at [http://eecs.wsu.edu/~cook/gt1/servicelearning.pdf](http://eecs.wsu.edu/~cook/gt1/servicelearning.pdf).

The Center for Civic Engagement (CCE) offers WSU students, faculty, campus departments, and community partner opportunities to share knowledge, skills, and resources for the benefit of student learning and the well-being of our communities. The CCE facilitates service learning experiences as part of academic curricula and will be working with this class to provide appropriate community-based experienced for students.

You will manage your service learning experience on CougSync (https://orgsync.com/login/washington-state-university-pullman). The system tracks your activities and can even provide you with a co-curricular transcript or e-portfolio to show all of the activities you have participated in at WSU. This will be a great resource when applying for jobs or internships! Once CCE has your contact information (we will take care of this on the first day of class), you will receive an email message inviting you to your course portal on CougSync. Log on to CougSync using your WSU network ID and password to access your course space. If you do not receive this email in a timely manner or have any questions please contact a Peer Mentor at the CCE (servicelearning@wsu.edu or 509-335-1661) or visit cce.wsu.edu.

You will need to sign up for your placement work by 9am on September 8th. After you complete your placement work, you will write up a report summarizing your observations. This paper is due on December 1st by 9am, so please start your placements immediately. Papers are to be turned in at the beginning of class on 12/1. Papers should be no longer than 6 pages double spaced.

Address the following points in your service report:

- Describe three everyday challenges that the individuals/staff you worked with faced.
- For each of the three everyday challenges, describe at least one strategy or compensatory/assistive technology that was being used? If no strategy/technology was being used, comment on what you think the reason for this was.
- For each of the three everyday challenges, describe how well you felt the strategy and technology was working. Propose at least one additional technology that you believe could provide assistance. If no strategy was being used, propose a strategy or assistive technology that you think would prove helpful for the situation. For each proposed technology, highlight data/articles read/class material that supports its probable success.
**Attendance:** Weekly attendance is strongly encouraged. While students may miss class for urgent reasons, absences that are not cleared with the instructors will factor into the Class Participation portion of the semester grade.

**Policy Regarding Late Work:** Assignments are expected to be emailed by the listed due date and time. However, assignments that are turned in up to one day late will be accepted with a 20% grade penalty and assignments turned in up to two days late will be accepted with a 40% grade penalty. Assignments turned in more than two days late will not be accepted.

**Field Trips:** Two field trips are planned during the semester, one in Pullman and one in Spokane. In each case, transportation will be provided if needed. The field trip to Spokane may take longer than the scheduled class period. If you are unable to attend due to schedule conflicts, we will arrange for you to participate via Skype.

**Students with Disabilities:** Reasonable accommodations are available for students with a documented disability. If you have a disability and may need accommodations to fully participate in this class, please either visit the Access Center (Washington Building 217) or call 509-335-3417 to make an appointment with an Access Advisor. All accommodations MUST be approved through the Access Center.

**Academic Integrity Policy:** [http://www.conduct.wsu.edu](http://www.conduct.wsu.edu) As an institution of higher education, Washington State University is committed to principles of truth and academic honesty. All members of the university community share the responsibility for maintaining and supporting these principles. When a student enrolls in Washington State University, the student assumes an obligation to pursue academic endeavors in a manner consistent with the standards of academic integrity adopted by the University. To maintain the academic integrity of the community, the University cannot tolerate acts of academic dishonesty including any forms of cheating, plagiarism, or fabrication. I will treat all such cases seriously, including class failure.

Washington State University reserves the right and the power to discipline or to exclude students who engage in academic dishonesty. To that end, the University has established rules defining prohibited academic dishonesty and the process followed when such behavior is alleged. These rules incorporate Washington State University’s Academic Integrity Policy, the University-wide document establishing policies and procedures to foster academic integrity. This policy is applicable to undergraduate and graduate students alike, as it pertains to dishonesty in course work and related academic pursuits. In cases of dishonesty in research and original scholarship, the University’s Policy and Procedural Guidelines for Misconduct in Research and Scholarship may take precedence over the policies and procedures contained herein.

**Safety Information:** Washington State University is committed to maintaining a safe environment for its faculty, staff, and students. Safety is the responsibility of every member of the campus community and individuals should know the appropriate actions to take when an emergency arises. In support of our commitment to the safety of the campus community the University has developed a Campus Safety Plan, [http://safetyplan.wsu.edu](http://safetyplan.wsu.edu). It is highly recommended that you visit this web site as well as the University emergency management web site at [http://oem.wsu.edu/](http://oem.wsu.edu/) to become familiar with the information.
## Course Calendar

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<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Due by 9am</th>
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<tbody>
<tr>
<td>8/25</td>
<td>Syllabus / Research methods and expectations</td>
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<td></td>
<td>Research group visitors (Alyssa, Jen, Gina)</td>
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<tr>
<td>9/1</td>
<td>Technologies for aging in place</td>
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<td>Service learning visitors (Kristen Koenig)</td>
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<td>Research group visitor (Jess)</td>
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<tr>
<td>9/8</td>
<td>Research Methods</td>
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<td>Tour of Dr. Rich Lamb’s lab</td>
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<td>9/15</td>
<td>Aging and the senses</td>
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<td>Research group visitors (Cody, Bryan)</td>
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<tr>
<td>9/22</td>
<td>Ambient sensors and sensor networks</td>
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<td>Discussion of Research Projects</td>
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<td>9/29</td>
<td>Smart environments</td>
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<td>Smart home tour</td>
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<tr>
<td>10/6</td>
<td>Aging, mobility and exercise</td>
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<td></td>
<td>Meet with project teams</td>
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<tr>
<td>10/13</td>
<td>Machine learning and activity learning</td>
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<td></td>
<td>Guest speaker: Dr. Andrew Sixsmith</td>
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<tr>
<td>10/20</td>
<td>Machine learning and activity learning</td>
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<td>Guest speaker: Dr. Jesse Hoey</td>
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<td>10/27</td>
<td>Human factors and interfaces for older adults</td>
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<td>Guest speaker: Dr. Denise Bauer</td>
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<td>Homework Lab/ Meet with project teams</td>
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<td>11/3</td>
<td>Field trip to St. Luke’s Rehabilitation Institute</td>
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<td>Guest speaker summary due</td>
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<td>(<a href="mailto:acrandal@wsu.edu">acrandal@wsu.edu</a>)</td>
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<tr>
<td>11/10</td>
<td>Wearable sensors, processing streaming data</td>
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<td>Project presentations</td>
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<td>11/17</td>
<td>Field trip to technology lending library</td>
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<td>Project presentations</td>
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<td>11/24</td>
<td>Thanksgiving</td>
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<td>12/1</td>
<td>Aging, cognition and everyday function</td>
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<td>Guest speaker: Dr. Sherry Willis</td>
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<td>12/8</td>
<td>Service learning discussion</td>
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<td>Poster session</td>
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<td>Poster (due 12/3 9am, <a href="mailto:acrandal@wsu.edu">acrandal@wsu.edu</a>)</td>
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Reading List (required): Will be updated

9/1


9/8


9/15


9/22 and 9/29


Speaker will also send a manuscript


12/1


Speaker will also send a manuscript

*Available to WSU all campuses
+must copy or order through interlibrary loan

Books on Gerontology (additional resources)


