Course Goals
To facilitate knowledge/skill acquisition for the rehabilitation professional in becoming a knowledgeable consumer of rehabilitation research. To facilitate the completion of the Master's project.

Course Objectives
This course is designed to help rehabilitation counseling students meet competencies identified in the required competencies for rehabilitation counselors:

**C.7.4 Measurement and statistical concepts**
C.7.4.a. Describe basic measurement concepts and associated statistical terms.

**C.8.1 Basic statistics and psychometric concepts**
C.8.1.a. Understand research methodology and relevant statistics.

**C.8.2 Basic research methods**
C.8.2.a. Interpret quantitative and qualitative research articles in rehabilitation and related fields.
C.8.2.b. Apply research literature to practice (e.g., to choose appropriate interventions, to plan assessments).

**C.8.3 Effectiveness of rehabilitation counseling services.**
C.8.3.a. Develop and implement meaningful program evaluation.
C.8.3.b. Provide a rationale for the importance of research activities and the improvement of rehabilitation services.

**C.8.4 Ethical, legal, and cultural issues related to research and program evaluation.**
C.8.4.a. Apply knowledge of ethical, legal, and cultural issues in research and evaluation to rehabilitation counseling practice.

Course Description
This is a hybrid course, consisting of both online and in-class work. Normally, the lectures will be delivered online, and may be accessed as soon as they are available. In-class work will be demonstration and practice of the knowledge and skill sets associated with the course. In-class work will be conducted from 12:35–1:50, T, R, Faner 1024.

Course Objectives
Upon completion of the course, the student will be able to:

- Select a researchable problem and write a prospectus based on it
- Conduct a literature review, using traditional and electronic sources
- Use the APA publication manual
- Read and discuss rehabilitation research

Texts Required

ActivStats, 7e (see below).


(Buy or borrow this book. Every mandatory assignment requires you to follow APA guidelines. Make sure you get the 6th edition; the 5th will not do. Don’t get the first printing, because it is error-ridden. Any new printing you get from a bookstore will likely be okay.)

Software Required
Velleman, P. (2009). ActivStats, 7e. Addison Wesley Longman. This is a multimedia program in basic statistics on CD-Rom. It is also an excellent basic text in statistical analysis. It contains a limited version of Datadesk statistical analysis software, which you will need to do many of the assignments. It also has an option to install QuickTime on your computer, which you will need to view the video segments in ActivStats. Please purchase your own copy of this program. Each student will need a separate student file and access to the CD-Rom when using the program and these should be brought to every class session. (Important: When you purchase ActivStats, do not purchase ActivStats for SPSS unless you already own SPSS. It will not work. Likewise, do not purchase ActivStats for Excel unless you already own Excel.) If you purchase an older version of ActivStats, the lessons will be acceptable, but the homework problems may not match and you may not get as much out of class sessions. Please see me if you decide to do this anyway.

Do not give illegal copies to other people, or take illegal copies from them, but as soon as you purchase ActivStats, make a copy of the CD. Put the original away in a safe place, and
always use the copy. If the copy becomes damaged, you can make another one. But if the original becomes damaged, you’re out of luck.

This program is available at the bookstore, or may be purchased directly from http://www.mypearsonstore.com/bookstore/product.asp?isbn=0321500148&xid=PSED. It may also be available on Amazon.com or Half.com.

*Adobe Acrobat Reader.*

Some of the content files are available only in pdf format, requiring the free reader.

*Flash*  
Some of the help files on the course site require that the Flash add-in be installed to your browser. Available from Macromedia.com.

*Microsoft Word*  
All mandatory assignments must be submitted as word processing files, created using Word. If you do not own this program, please use one of the many computer labs on campus to convert your file. Do not use any word processor from a program with “Works” in the title. I will consider files not produced in Microsoft Word as not having been submitted, because I will not be able to open them.

Course Requirements

There are eight dated components upon which students could be evaluated. The five article critiques, four literature searches, midterm and final exams, and project are required; failure to submit them will result in failure in the course (a grade of “F”). The ActivStats assignments and projects are elective, as are any extra credit activities that arise. Completion of the voluntary components cannot substitute for completion of the required components, but it can add to the overall point count, thus earning the student a higher grade. Although a student may complete as many elective assignments as desired within the guidelines herein, the astute student will notice that some of the elective components must be completed in order to get a passing grade or better,

1. Article critiques (5 @ 10 points each): Students should find five different quantitative studies in an area of their interest on the Internet, read them, and write a critique of them. The studies must have come from a peer-reviewed professional journal. Those coming from inappropriate sources will be returned without feedback and will not be considered submitted. If you have any problems deciding if a journal or article is appropriate, ask well ahead of the due date. Critiques should follow the format portrayed in “Guidelines for critiquing an article,” and the critique examples, all available on the web site. All critiques should begin with an APA-6th edition style reference for the article being discussed. Rather than simple yes/no answers to the checklist, students should detail their answers. Full credit will be given for critiques which reflect a thorough reading of the article as well as a basic understanding of the statistical/research topics included. Points will be deducted for quality as described above, and for lateness—one additional point deduction for each day late. The Guidelines and examples are available as a handout in the Content area for the course website. Please make sure you provide an accurate link to the article, or the article itself, so that full credit and corrective feedback can be given.
2. Literature searches (4 @ 10 points each): Full credit will be given for those assignments which are on-time, accurate in their addresses (for on-line articles), complete, and follow APA format. Points will be deducted for deviations from this standard, and for lateness—one point deduction for each 24-hour period late.

The first three searches, available in the Assignment area for the course site, involve using computer-based resources. The fourth literature search involves using any literature search resources: (a) Choose a topic in which you are interested, and would like to research further. Presumably, this would be your topic for your master's paper, but if you haven't chosen one yet or you are not required to do one, pick a tentative topic that interests you. (b) Conduct a cursory literature review. Locate at least 10 primary sources for information about your topic. (c) Turn in a reference list of the 10 primary sources identified in APA format. Full credit will be given for those assignments which are on-time, complete, and follow APA format. Points will be deducted for deviations from this standard.

3. Midterm (50 points) and Final (50 points): There will be two tests—a midterm and a final—each consisting of objective-type questions covering materials from the first and second halves of the semester. The final will be cumulative and will contain material from the entire semester. The tests will be taken in class. They will be administered through the D2L.

Dates and coverage will be announced well before the actual session.

4. Performance on course project (40 points): A course project, consisting of researching and preparing a prospectus (possibly for your Master's thesis or paper) is explained in another packet of information (available at the Content section on the web site). If you haven't identified a topic for your thesis/paper, or if you are a counseling student opting out of the master's paper, choose one arbitrarily to complete this assignment. The paper will be submitted in two drafts. The first draft will be reviewed and returned for corrections. Final drafts must be submitted in APA format. One point will be deducted for each 24-hour period late.

5. ActivStats Homework (5 points each): Short homework problems (elective) are available through ActivStats. The Assignment Dropbox will identify the problem that you can answer. You can do up to 25 homework problems, limited to one from each content area. Homework problems will not be accepted late.

6. ActivStats Projects (10 points each): Short projects (elective) are available through ActivStats. You may do up to 10 of them, but no more than 1 from any ActivStats chapter, beginning with Chapter 17 in ActivStats. Submit these through the Assignment Dropbox. Projects will be accepted only during the last two weeks of class.

7. Extra Credit Activities (1-5 points each): Occasionally, extra credit will be available and announced in class or on the course web site.

8. Annotated Bibliography (ungraded): Those RCT students taking 593A for 4 credits must submit an annotated bibliography. Students will choose a topic and find 16 primary sources on that topic. The submitted product will include an APA reference and a one-paragraph (approximately 100 words) summary of each of the 16 sources. The sources themselves do not have to be submitted, only the annotations.
Course Policies

1. All critiques, literature searches, and the course project must be completed as Microsoft Word (doc or docx suffix) documents, and submitted through the Dropbox area on the course website. Do not send assignments through regular e-mail; they must be submitted to Desire2Learn for credit. If Desire2Learn is down for any reason, you can submit them through regular e-mail to ensure that you do not get penalized for lateness, but they will not be graded until they are submitted to Desire2Learn. If your computer is down, it is your responsibility to find some other way to get the assignment in on time.

2. Literature Search 1, Critique 1, and the Project First Draft are considered drafts for the purpose of grading, i.e., students will have a chance to redo them without loss of points except for lateness. The first draft of the project is also subject to loss of points for APA formatting errors.

3. **Bring your own ActivStats disk and your student file to class every class session.** In the past, students have found it helpful to mail their ActivStats student file to themselves; that way they can always get to it if they have forgotten to bring it to class.

4. Formats for assignments: There are three types of assignments; each has a corresponding submission format:
   a. ActivStats assignments and projects which require the use of Datadesk must be submitted as Datadesk files (use a dsk suffix in filename), through the Dropbox on Desire2Learn. Those not submitted as Datadesk files will not be accepted.
   b. ActivStats assignments requiring the use of a “tool” like the density tool or hypothesis testing tool should be submitted as Microsoft Word (doc or docx suffix) files. Copy and paste each intermediate stage of the tool; do not merely send the answers. There is a help file on the course site demonstrating how to copy and paste the tool.
   c. ActivStats assignments and projects not requiring the use of Datadesk may be submitted as Datadesk files, or as Word files.

5. Some of the problems in the latest version of ActivStats will provide answers. For that reason, you must show your work for every problem solved. For those questions that require you to give a text answer (no computation), you must provide your reasoning for giving the answer you gave. Assignments that are submitted without the work or reasoning will be returned without comment.

6. Please pay careful attention to all dates, times, and requirements shown in the syllabus and on the website. Changes will be posted to the course Announcements. You are responsible for observing dates, times, and requirements. I am not responsible for reminding you.

7. It is your responsibility to seek help when you are having difficulty, with D2L, Activstats, quizzes, literature searches, or critiques. Grading is more lenient when there is evidence that the student has made a conscious and sincere effort to stay active in the course and understanding the material, by having read the material first, and then contacting course faculty to deal with remaining problems.
8. Even though all assignments are posted now and may be submitted any time prior to the due date, those submitted early will not be reviewed early. They will be held until the due date.

9. It is the policy of the Rehabilitation Counseling and Administration program to facilitate reasonable accommodations for any otherwise qualified students with disability, which will assist them in completing their degree programs. Students requiring such accommodations should notify their faculty and faculty advisors, and work through the SIUC Disability Support Services (DSS), whose offices are centralized at B150 Woody Hall, or Project Achieve.

10. There will be “zero-tolerance” for plagiarism in this class. Plagiarism, here, is defined as representing another’s work as one’s own, including any instance of singly or combining any of the following without acknowledging the original source: paraphrasing or directly quoting another’s work (either word-for-word, or paraphrase by word substitution or order modification); or using another’s written or spoken theories, hypotheses, ideas, opinion or statistics when they are not “common knowledge”; or using another’s tables or graphics. In all instances of using another’s work, acknowledgment must be in a manner consistent with APA-6th edition. Violations will result in consequences consistent with the extent of the plagiarism and whether the instance was the first or latest offense, including loss of credit on the assignment, loss of letter grade in class, and failure of class. They will always result in a notation in the student’s file.

Examples of plagiarism: This is a quote from Lehmann & Crimando, 2008, p. 159:

“Social scientists would refer to this phenomenon as an unanticipated or unintended consequence, or the ‘detrimental, unintended consequences of actions undertaken for what are intended to be noble purposes’ (Shaffer, 2003, para. 5), the law of which suggests that people’s actions always result in unintended consequences (Norton, 2002), with the latter sometimes being the exact opposite of what was intended.”

Well-known ways to plagiarize include repurposing a paper developed for another reason either by one’s self or another person, repeating a quote verbatim without any attribution, or attributing it but not indicating that it is an exact quote (by omitting the quotation marks, if required, and page number). Lesser known ways would include plagiarism by simple word substitution/omission (This phenomenon is called an unanticipated or unintended consequence, or the ‘detrimental, unintended consequences of actions undertaken for what are intended to be noble purposes’ (Shaffer, 2003, para. 5), and the law suggests that people’s actions always result in unintended consequences (Norton, 2002), that are sometimes the exact opposite of what was intended); order modification (Detrimental, unintended consequences of actions undertaken for what are intended to be noble purposes are referred to by social scientists as unintended or unanticipated consequences); or a combination of both (Detrimental, unintended consequences of actions undertaken for what are intended to be noble purposes are referred to by social scientists as unintended or unanticipated consequences, and the law of unintended consequences says that result may be exactly opposite to what was desired). Any of these would be plagiarism if they included no attribution or identification as a quote.
The preferred method of including other’s work in your own paper would be to paraphrase, which means putting into your own words, and providing proper attribution. For example, you could say “According to Lehmann and Crimando (2008), the law of unintended consequences says that any action may have unplanned and, sometimes, opposite results.” A less preferred method would be to provide a properly attributed exact quote. My rule of thumb is to only quote when (a) changing even one word of the original statement would weaken the argument; (b) the original author made up a new term; (c) the original author made a mistake; or (d) for variety when used sparingly. Even then, I will return for rewrite any paper which is riddled with lengthy or excessive quotes. If I give you an assignment, I want to read your words; if I wanted to read another author’s words, I would read the original.

11. There are no exceptions to the policies. Please do not feel compelled to provide a rationale or apology for missing a class, quiz, or assignment. I will assume you have a good reason. You must assume you will face the consequences of missing.
## Grading

<table>
<thead>
<tr>
<th>For a grade of</th>
<th>Do these components</th>
<th>For a point total of at least</th>
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</table>
| **A**         | *Mandatory components*  
                   Article critiques (all) 
                   Literature searches (all)  
                   Midterm and Final 
                   Course project  
                   *Voluntary components*  
                   ActivStats homework (up to 25)  
                   ActivStats projects (up to 10) | 280 |
| **B**         | *Mandatory components*  
                   Article critiques (all) 
                   Literature searches (all)  
                   Midterm and Final 
                   Course project  
                   *Voluntary components*  
                   ActivStats homework (up to 25)  
                   ActivStats projects (up to 10) | 260 |
| **C**         | *Mandatory components*  
                   Article critiques (all) 
                   Literature searches (all)  
                   Midterm and Final 
                   Course project  
                   *Voluntary components*  
                   ActivStats homework (up to 25)  
                   ActivStats projects (up to 10) | 220 |
| **F**         | One or more of these components is missing:  
                   Article critiques  
                   Literature searches  
                   Midterm and Final 
                   Course project | <220 |
Grading Examples

Although it is impossible to describe the many combinations of points one can use to get a certain grade, it is possible to demonstrate with a few examples:

Rashida wanted a grade of A. She made sure she did all of the mandatory components on time: She completed all five critiques, earning 10, 9, 9, 7, and 10 points for them respectively, and the four lit searches, receiving 10, 10, 9, and 10 points. Her test total was 66. She completed the first draft of the project on time and thus was able to receive feedback allowing her to resubmit for the entire 40 points. She submitted 25 ActivStats homework assignments, for a total of 90 points. This gave her a total of 280, for a grade of A.

Văn Thanh wanted a grade of A. He made sure he did all of the mandatory components: He completed four critiques on time, earning 10, 7, 8, and 7. He submitted the last critique well past the deadline, earning 0 points, but still submitted it since it was mandatory, and he could still qualify for a good grade. He did the four lit searches, receiving 10, 8, 10, and 10 points. His test total was 79. He completed the first draft of the project on time and thus was able to receive feedback allowing him to resubmit for the entire 40 points. He did 15 of the 25 ActivStats assignments, averaging 4 points. Finally, he did 10 of the 10 ActivStats projects, averaging 8, and managed to get 2 points of extra credit. This gave him a total of 284, for a grade of A.

Norbert knew he couldn't work hard enough for an A, because of pressures from work, but he needed a B so he would not have to repeat the class. He made sure he did all of the mandatory components on time: He completed all five critiques, earning 10, 6, 7, 7, and 6 points for them respectively, and the four lit searches, receiving 10, 9, 9, and 10 points. He only managed to get 56 points in total for the tests. He did not complete the first draft of the project on time and thus could not receive feedback allowing him to resubmit for the entire 40 points; he only got 33 points. He did 20 of the 25 ActivStats assignments, averaging 2.5 points. Finally, he and a partner did 6 of the 10 ActivStats projects, averaging 8.5. He turned in his ungraded annotated bibliography. This gave him a total of 264, for a grade of B.

Shelley struggled throughout the semester; she thought it was because of her “math phobia.” Although she turned in all of her mandatory components on time, they only amounted to 134 points, including 30 total in test points. She did manage to make 3 extra credit points throughout the semester. She turned in 15 ActivStats assignments, at an average of 2.5, and 10 projects with a partner for 75 points. This gave her a total of 261 points, enough for a B.

Despite reading the requirements in the syllabus, and receiving several general reminders on the website, Jan failed to turn in two critiques. Even having completed some ActivStats assignments and projects, as well as the course project and remaining critiques/lit searches, amassing 235 points, Jan received an F in the course and went on Academic Probation.
<table>
<thead>
<tr>
<th>Unit</th>
<th>Topic</th>
<th>Readings/Activities (Readings from Trochim &amp; Donnelly in italics)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Weeks 1-2</td>
<td>Introduction to Research Hypotheses /Research Questions DVs and IVs APA Style</td>
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<tr>
<td></td>
<td></td>
<td>1-1, 1-2 1-4a Problem Formulation Additional web content (look in Course Contents for Unit I Supplemental Material)</td>
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<tr>
<td>2</td>
<td>Weeks 3-7</td>
<td>The Research Process Descriptive Statistics Measurement Sampling</td>
</tr>
</tbody>
</table>
| 3 | Experimental Research | 6. Design  
|   |                      | 7. Experimental Design  
|   |                      | 8. Quasi-experimental Design  
|   |                      | 14. Analysis for Research Design  
|   |                      | III Generating Data  
|   |                      | 11. Designed Experiments  
|   |                      | IV Experience with Random Behavior  
|   |                      | 12. Randomness  
|   |                      | 13. Intuitive Probability  
|   |                      | 14. Conditional Probability  
|   |                      | 15. Random Variables  
|   |                      | 16. Sampling Distributions  
|   |                      | V Drawing Inferences  
|   |                      | 17. Estimating with Confidence  
|   |                      | 18. Confidence Intervals for a Mean  
|   |                      | 19. Testing Hypotheses  
|   |                      | 20. Tests for Means  
|   |                      | VI Additional Applications  
|   |                      | 21. Comparing Two Means  
|   |                      | 22. Inference for Proportions  
|   |                      | 23. Cross Tabulation and Chi Square  
|   |                      | 24. Inference for Regression  
|   |                      | 25. Multiple Regression  
|   |                      | 26. Analysis of Variance  
|   |                      | Additional Web Content  
| 4 | Research Ethics  
|   | Consumerism in Research |
IMPORTANT DATES *

Semester Class Begins: ..............................................01/17/2017
Last day to add full-term course (without Dean’s signature): ....01/22/2017
Last day to withdraw from the University with a full refund: ......01/27/2017
Last day to drop a full-term course for a credit/refund: ..........01/29/2017
Deadline to apply to graduate at the end of this term: ..............04/2/2017
Final examinations: ................................................05/8–05/12/2017
Commencement: ......................................................05/13/2017

*For more detailed information on the above deadlines, please visit http://registrar.siu.edu/calendars. For add/drop dates that apply to shorter-than-full-term courses, please look at the Schedule of Classes search results at http://registrar.siu.edu/sched-class/index.php

SPRING SEMESTER HOLIDAYS

Martin Luther King Jr.’s Birthday Holiday 01/16/2017
Spring Break 03/11—03/19/2017

WITHDRAWAL POLICY ~ Undergraduate only

Students who officially register for a session must officially withdraw from that registration in a timely manner to avoid being charged as well as receiving a failing grade for those courses. An official withdrawal must be initiated by the student, or on behalf of the student through the academic unit, and be processed by the Registrar’s office. For the proper procedures to follow when dropping courses and when withdrawing from SIU visit: http://registrar.siu.edu/students/withdrawal.php

INCOMPLETE POLICY~ Undergraduate only

An INC grade may be assigned when, for reasons beyond their control, students engaged in passing work are unable to complete all class assignments for the course. An INC must be changed to a completed grade within one full semester (undergraduates), and one full year (graduate students), from the close of the term in which the course was taken or graduation, whichever occurs first. Should the student fail to complete the remaining course requirements within the time period designated, the incomplete will be converted to a grade of F and such grade will be computed in the student’s grade point average. For more information visit: http://registrar.siu.edu/grades/incomplete.php

REPEAT POLICY

An undergraduate student may, for the purpose of raising a grade, enroll in a course for credit more than once. For students receiving a letter grade of A, B, C, D, or F, the course repetition must occur at Southern Illinois University Carbondale. Effective for courses taken Summer, 2013 or later, only the most recent (last) grade will be calculated in the overall GPA and count toward hours earned. This policy will be applied to all transferrable credit in that only the last grade will be used to calculate grade point average. Only those courses taken at the same institution are considered repeats under this policy. See full policy at http://registrar.siu.edu/students/repeatclasses.php

GRADUATE POLICIES

Graduate policies often vary from Undergraduate policies. To view the applicable policies for graduate students, please refer to the graduate catalog at http://gradschool.siu.edu/about-us/grad-catalog/

DISABILITY POLICY

Disability Support Services provides the required academic and programmatic support services to students with permanent and temporary disabilities. DSS provides centralized coordination and referral services. To utilize DSS services, students must contact DSS to open cases. The process involves interviews, reviews of student-supplied documentation, and completion of Disability Accommodation Agreements. http://disabilityservices.siu.edu/

PLAGIARISM

Student Conduct Code http://srr.siu.edu/student-conduct-code/

SAFETY AWARENESS FACTS AND EDUCATION

Title IX makes it clear that violence and harassment based on sex and gender is a Civil Rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, etc. If you or someone you know has been harassed or assaulted, you can find the appropriate resources here: http://safe.siu.edu

SALUKI CARES

The purpose of Saluki Cares is to develop, facilitate and coordinate a university-wide program of care and support for students in any type of distress—physical, emotional, financial, or personal. By working closely with faculty, staff, and students and their families, SIU will continue to display a culture of care and demonstrate to our students and their families that they are an important part of the community. For Information on Saluki Cares: call(618) 453-1492, email siucares@siu.edu, or http://salukicares.siu.edu/

SIU’S EARLY WARNING INTERVENTION PROGRAM (EWIP)

Students enrolled in courses participating in SIU’s Early Warning Intervention Program might be contacted by University staff during a semester. More information can be found at the Core Curriculum’s Overview webpage: http://corecurriculum.siu.edu/program-overview/

EMERGENCY PROCEDURES

We ask that you become familiar with Emergency Preparedness @ SIU. Emergency response information is available on posters in buildings on campus, on the Emergency Preparedness @ SIU website, and though text and email alerts. To register for alerts visit: http://emergency.siu.edu/

STUDENT MULTICULTURAL RESOURCE CENTER

The Student Multicultural Resource Center serves as a catalyst for inclusion, diversity and innovation. As the Center continues its work, we are here to ensure that you think, grow and succeed. We encourage you to stop by the Center, located in Grinnell Commons, to see the resources available and discover ways you can get involved on the campus. Visit us at http://inclusiveexcellence.siu.edu/

LEARNING AND SUPPORT SERVICES

Help is within reach. Learning support services offers free tutoring on campus and math labs. To find more information please visit the Center for Learning and Support Services website:

Tutoring : http://tutoring.siu.edu/
Math Labs http://math.siu.edu/courses/course-help.php

WRITING CENTER

The Writing Center offers free tutoring services to all SIU students and faculty. To find a Center or Schedule an appointment please visit: http://write.siu.edu/

AFFIRMATIVE ACTION & EQUAL OPPORTUNITY

Our office's main focus is to ensure that the university complies with federal and state equity policies and handles reporting and investigating of discrimination cases. For more information visit: http://diversity.siu.edu/

MILITARY COMMUNITY

There are complexities of being a member of the military community and also a student. Drill schedules, calls to active duty, complications with GI Bill disbursement, and other unforeseen military and veteran related developments can complicate academic life. If you are a member of the military community and in need of accommodations please visit Veterans Services at http://veterans.siu.edu/

Additional Resources:

ADVISEMENT: http://advisement.siu.edu/
SIU ONLINE: https://online.siu.edu/
SALUKI SOLUTION FINDER: http://solutionfinder.siu.edu/
MORRIS LIBRARY HOURS: http://libguides.lib.siu.edu/hours