

**Syllabus: Research Methods in Human Factors and Applied Cognition (PSYC 645)**

**Meeting time:** Wednesday 5:30 – 8:10 p.m., Spring 2020

**Meeting place:** Online

**Instructor:** Susanne Furman, PhD

Email: susannefurman@gmu.edu or Susanne.furman@nist.gov

Office location: Adjunct office

Office hours: Wednesdays 5:00 – 5:30, after class or by appointment

Note: email to Susanne.furman@nist.gov is the best way to reach me or by calling 703-967-0642 during the day.

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**Course Summary and Objectives**

Learning should be fun so the first objective is to make this class fun and engaging. This course will cover a variety of research methods in Human Factors Engineering. The primary focus will be research in the context of applied human factors interactions with products, work places, and technical systems. By the end of the course you should gain a great appreciation for the role that research plays within the product and system development life cycle. You will gain practical knowledge of the more common research methods used in human factors discipline in applied environments. Through class assignments and projects, students will develop some of the effective skills required to be an effective researcher used both in research and industry settings.

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**Prerequisites**

Cognitive Engineering (PSYC 530) and Advanced Statistics (PSYC 611) or permission from the instructor.

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**Required Textbook**

Human Factors Methods: A Practical Guide for Engineering and Design 2nd Edition

by Neville A. Stanton (Author), Paul M. Salmon (Author), Laura A. Rafferty (Author), Guy H. Walker (Author), Chris Baber (Author), Daniel P. Jenkins (Author)



Alistair Cockburn (2000). Writing Effective Use Cases. Addison-Wesley Longman Publishing Co, Inc. Boston, MA USA [you can buy this on Amazon at a low price]

***Note:*** Additional readings will be used to supplement the required textbook chapters. Those readings will be distributed to the students prior to the required reading.

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**Technology Used for the Course**

Technology uses in this course will be GMU email to students and email to instructor: sfurman@gmu.edu, Susanne.Furman@nist.gov or susannefurman@yahoo.com

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**Class Cancellation Policy**

Dr. Furman will notify students either in advance or by email if class has to be canceled. If class is canceled in advance, students will be given a homework assignment and expected to read the assigned reading for that week and complete the homework assignment and bring it to the next class.

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**Course Schedule**

The topics and readings are tentative and may change during the semester. The instructor will provide notice of any changes as far in advance as possible. Students are expected to actively read and engage with the assigned readings ***BEFORE*** the class.

We may also have some impromptu visits from professionals come and visit us and talk about what they learned and how they are using it in their jobs.

**Add/Drop Deadlines**

The last day to add/drop 100% tuition refund: Feb

Final drop deadline: Feb

**Reading Assignments**

|  |  |  |
| --- | --- | --- |
| **Date** | **Topic** | **Readings** |
| 1/20 | Introduction to the Class  | None |
| 1/27 | Chapter 1 Introduction to Human Factors Methods | Chapter 1 - Stanton |
| 2/03 | Chapter 2 Data Collection | Chapter 2- Stanton |
| 2/10 | Chapter 3 Task Analysis | Chapter 3 - Stanton |
| 2/17 | Continue with Task Analysis  | Chapter 3 - Stanton |
| 2/24 | Chapter 4 -Cognitive Task Analysis | Chapter 4 - Stanton |
| 3/03 | Chapter 5 – Process Charting Methods | Chapter 5 - Stanton |
| 3/10 | **Spring Break** |  |
| 3/17 | Chapters 1, 2 & 3 Use Cases Introduction, The Use Case as a Contract for Behavior, Scope | Chapters 1, 2, & 3 Cockburn  |
| 3/24 | Chapter 4, 6 & 7 Stakeholders & Actors; Preconditions, Triggers, and Guarantees; Scenarios & Steps  | Chapters 4, 6, & 7 Cockburn |
| 3/31 | Chapter 10 Interface Analysis Methods | Chapter 10 Stanton |
| 4/07 | Chapter 11 Design Methods | Chapter 10 Stanton |
| 4/14 | Usability Testing – Writing the Report, Creating Task Scenarios | Other Materials |
| 4/21 | **Prototyping** | Other Materials |
| 4/89 | **Project Presentations**  |  |
| 5/06 | **Exam Week – Project Presentations if Needed**  |  |

***(Note: reading assignments may change depending on the class and progress)***

**Grading**

Letter grades will be based on a combination of:

* Class attendance and participation
* Quizzes (I expect you to come to class prepared – please do so, so quizzes aren’t needed)
* Assignments
* Final Projects

**Assignments** (30%): consist of in-class exercises, take-home projects, and short papers.

**Quizzes** (20%): There may be a quiz at the beginning of class and these quizzes are to ensure students are prepared for class or from the previous week to ensure students understood the topics. The lowest quiz score will be dropped including a missed quiz due to an absence. There are no make-up quizzes. If more than one quiz is missed (only one quiz can be dropped) then the student will receive a ‘0’ (zero) for that quiz.

***(NOTE: if no quizzes – assignments are 40%; student-led projects; class participations 15%)***

**Student-led Final Project** (35%): Each student will select a topic from the syllabus. The student will do additional research and then lead a class discussion as well as presentation. Further details will be covered in class. The selected project must be approved by the instructor.

**Class Participation** (15%): Much of the course will required class participation. The class participation will be evaluated by attendance (attendance will be taken at the beginning of each class) and by participation in discussions.

**Final Grade**

A+ 97-100%

A 90-96.9%

B+ 87-89.9%

B 80-86.9%

*Anything less than a B is considered flunking the class and this should not happen!*

C+ 77-77.9%

C 70-76.9%

D let’s hope not! 60-69.9%

F should NEVER happen less than 60%

**Class Attendance**

Class attendance is required for all classes without exception. Attendance will be taken for every class. As a courtesy, please don’t arrive late for class. Because I understand that ‘life happens’, I will allow one unexcused absence in the semester. Please try to let me know if you cannot make class. After the one absence, you will incur a penalty of a reduction in your overall course grade for each unexcused absence (5% of your total grade). If you must miss class or arrive late, please let me know in advance or provide university-approved documentation to allow makeup work or assignments. Assignments from excused absences must be made up within one week of returning from a university-excused absence.

**Honor Code**

All provisions of the GMU Honor Code will be followed in this class. During quizzes or exams, no books, notes, or student interaction will be permitted. For papers, all work submitted must be original. You can use quotes in your papers, but they must be correctly cited and should be few in number. You can consult other sources or students for information regarding format, grammar, etc., but you should be doing the writing. The instructor reserves the right to assign an ‘F’ grade to students convicted of an honor code violation.

**Official Communications via GMU E-mail:** Mason uses electronic mail to provide official information to students. Examples include communications from course instructors, notices from the library, notices about academic standing, financial aid information, class materials, assignments, questions, and instructor feedback. Students are responsible for the content of university communication sent to their Mason e-mail account and are required to activate that account and check it regularly.

**Disability Statement:** “If you are a student with a disability and you need academic accommodations, please see me and contact the Disability Resource Services (DRS) at 703-993-2474.”