# CS 4712 – User Interface Engineering
## Course Syllabus

**Online**

| **Instructor** | Dr. Sarah M. North, Instructor  
Email: snorth@kennesaw.edu  
Cell: 678-520-6102 Voice: 470-578-7774  
**Office hours:** T-Th 10:00 - 11:00am  
**Office:** Marietta Campus (J-170)  
Other hours via D2L [http://d2l.kennesaw.edu](http://d2l.kennesaw.edu) Chat sessions and/or by appointment only |
|---|
| **Class Design** | This course will be delivered in an online delivery mode with lectures video recording (.mp4) via D2L, laboratory activities, assignments, assessments, and supported resources.  
An online course can offer opportunities for students to pursue their educational objectives when attending school with a different delivery method (Online) than the traditional in-class method. Specifically, this course will be delivered by online lectures with supporting research project, presentation, and examination. All lecture notes will installed and available via [KSU D2L Brightspace](http://d2l.kennesaw.edu) learning management system.  
**Student-centered learning**  
Variety of online student-centered learning tools will complement individual student learning styles and help students becomes more versatile learners.  
**Collaborative learning**  
Online group work allows students to become more active participants in the learning process. Contributing input requires that students comprehend what is being discussed, organize their thinking coherently, and express that thinking with carefully constructed language. |
| **Textbook & Resources** | **Required:**  
**Designing the User Interface:** [Strategies for Effective Human-Computer Interaction, 6/E](http://www.pearson.com) by Ben Shneiderman, Catherine Plaisant, Steven Jacobs. (2017, Pearson Education Company),  
ISBN-9780134380384, 013438038X  
eText ISBN: 9780134380728  
**Recommended:**  
[User Interface Design And Evaluation](http://www.mkp.com) (Link to the Textbook) – refer to D2L Resources for Specific Chapters by Debbie Stone, Mark Woodroffe, Caroline Jarrett, Shailey Minocha; Morgan Kaufmann Publishers  
ISBN: 0120884364 |
| **Prerequisite** | Undergraduate Semester level [CS 2302 or CS 1302](http://cs.kennesaw.edu/academics/undergraduate/bscs.html) Minimum Grade of C |
Course Description

A comprehensive study of techniques in design and implementation of user interfaces engineering. Topics include the foundation of human-computer interaction and interface related to software lifecycle, building a graphic user interface engineering, interaction devices and technologies, human-computer dialogue, cognitive models, usability, the design and development process, user interface management systems (UIMS), interface style and techniques, user learning, and diversity in interaction styles. Major research and the building of a working graphic user interface are included.

Course Learning Outcomes

After successful completion of this course, a student should:

1. Describe basic user interface engineering definitions, concepts, and principles.
2. Apply user interface concepts and principles to analyze and evaluate a variety of approaches to user interface design.
3. Acquire an understanding of needs analysis of user interactions/interfaces, legal, ethical, and social issues.
4. Design, develop, implement, and present a new user interface for an application applying concepts and principles of user interface.

Table of Content

Module 1:

Part I: Introduction

   Chapter 1: Usability of Interactive Systems
   Chapter 2: Guidelines, Principles, and Theories

Module 2: Part II: Development Process

   Chapter 3: Managing Design Processes; Social, Ethical, and Legal Issues
   Chapter 4: Evaluating Interface Designs; Control of Psychological Orientation

Module 3: Part III: Interaction Styles

   Chapter 5: Direct Manipulation and Virtual Environments
   Chapter 6: Menu Selection, Form Fillin, and Dialog Boxes

Module 4:

   Chapter 7: Command and Natural Languages
   Chapter 8: Interaction Devices

Module 5:

   Chapter 9: Collaboration and Social Media Participation

Module 6: Part IV: Design Issues

   Chapter 12: User Documentation and Online Help

Module 7:

   Chapter 13: Information Search

Module 8:

   UIE Project Completion

Turnaround Time on Assignments/Assessments

All in-class and online assignments and assessments will be graded and posted within a week after the due dates.

Response Time to Emails and Voicemails

I will respond to all emails and voicemails within 24 hours on weekdays and 48 hours on weekends. Please e-mail via http://d2l.kennesaw.edu/.

Tracking Learning Progress

Students have continuous opportunities to track their learning progress via Grade Tool provided on the D2L home page.
Attendance:

The Instructor expects your attendance on D2L daily, minimum 2-3 time per week. Grade performance is a demonstrated function of attendance, preparation, and participation online. Students in this class should realize the nature of the course in which they are enrolled. This is an online class with no on-campus meetings scheduled. Therefore, there are no planned face-to-face interactions between students or between students and the instructor.

Students are encouraged to visit the instructor on campus during office hours but this is not required. Students will interact with each other and with the instructor virtually, through online discussions in D2L, and email. It is easy to fall behind in any course, but especially in an online course where it is up to the student to formalize a time to work on course materials. In order to ensure a student does not fall behind it is STRONGLY encouraged that students keep to the schedule suggested in this syllabus [basically one course module per 2 weeks during Fall and Spring semesters and four per week during a 4-week Summer semester].

There is an activity and assignment due for every module. This is a way to keep the student focused and for the instructor to assess student progress. Students must make a concerted effort to maintain currency and not wait until the last minute to complete assignments. The course is designed to enhance student learning, but the student is ultimately responsible to ensure that the learning takes place.

Evaluation criteria explained:
- Students are expected to be active participants in each course activities. Full credit for participation will be extended to students who regularly participate in discussion, share ideas, and contribute relevant personal experiences.
- Examinations will consist of essay (short and long answers), multiple choices, T/F questions, technological comprehension that cover in the lecture material, and assigned readings.
- Students will be given specific guidance on the amount of collaboration permitted for each assignment.

Exams:
There will be 2 primary examinations (cumulative Midterm & Final examination). The content will come from the text and other material presented in lecture sessions as well as the homework assignments. Note that material presented in PowerPoint lectures will supplement the assigned reading. There will be no make-up examinations. It is the student's responsibility to arrange for an excused absence before the exam. A grade of zero will be assigned for all exams missed without an excused absence. If an emergency arises on the day of a midterm, and the instructor deems that the absence is excused, then the weight of the final exam may be increased to replace the midterm. [Link](http://registrar.kennesaw.edu/calendars/)

Discussion:
There will be eight discussion questions within each module which reflect your weekly online attendances. Students are required to participate in all discussions during the semester via D2L [Link](http://d2l.kennesaw.edu/)

Assignments:
Assignments are due throughout the term. Each of these assignments is weighted as noted in the assessment section below. You lose 20% of your score if you turn in a homework/presentation/assignment late, and late presentation/project/assignments will only be accepted up to one week after the due date! Late works / assignments / projects are not accepted!

Note: Any assignments, project, online assessment past the due dates points off (above restriction) and/or will not be accepted.

Assignments are due throughout the term and must be submitted through D2L by 11:59pm on designated due date for each assignment. Each assignment is weighted as noted in the assessment section below. You lose 20% of your score if you turn in a homework assignment late, and late assignments will only be accepted up to one week after the due date!
UIE Assignments

1. **UIE Interface Assignments**

   There will be seven *User Interface Engineering* assignments that you can create using Windows GUI applications either Java, C++, Visual Basic .net, or any other languages that you are comfortable to program with. *Please refer to learning modules and/or dropbox for detail descriptions.*

2. **UIE Individual 2-pages Research Article Report**

   Each student expected to locate an article in specific are given on the assignment dropbox in related HCI/UE and write 2-pages summary of the paper, double space length last page s of references of APA format. HCI/UID articles must be from scholarly article publication at ACM (*Association For Computing Machinery*; login to KSU Digital Library and ACM full text archive) including references.

**Research/Paper Project Requirements:**

The purpose of the project is to provide an opportunity for you to conduct a HCI design/user interface research project/paper and learn about research methodology, understand, organize, and present a synopsis of a current topic/research project in HCI/UID. Projects can address virtually any technical issue in the area of HCI/UID technologies. The report is to be done individually and/or group within the 4 phases of deliverables. Please read to [http://www.drnorth.net/E-Research-Book.exe](http://www.drnorth.net/E-Research-Book.exe) e-research book to get to know research proejct compoents.

**APA Documenting Required:**

All CS students are encouraged to use digital or library of the American Psychological Association (APA), available in the KSU bookstore and elsewhere. When any portion of another author's work is used, whether it is from a course textbook or outside work, including the World Wide Web, in whole, in part, or paraphrased, that work must be cited. Proper citation formats are provided. Failure to do so can result in Academic Misconduct Proceedings.

**Student Course Evaluation:**

A standard questionnaire (described below) will be administered during the last two weeks of the semester in all courses. Additional questions developed by the college or instructor(s) may be included as well. It is important that each student provide meaningful feedback to the instructor(s) so that changes can be made in the course to continually improve its effectiveness. We value student feedback about the course, our teaching styles, and course materials, so as to improve our teaching and you’re learning. At a minimum, the following two questions will be asked:

1. Identify the aspects of the course that most contributed to your learning (include examples of specific materials, exercises and/or the faculty member's approach to teaching and mentoring), and
2. Identify the aspects of the course; if any that might be improved (include examples of specific materials, exercises and/or the faculty member's approach to teaching and mentoring).

**Assessment Grades will be calculated as follows:**

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>UIE – GUI Applications – Seven Assignments</td>
<td>235</td>
</tr>
<tr>
<td>Discussion (eight Modules)</td>
<td>40</td>
</tr>
<tr>
<td>Academic Honest Integrity Statement</td>
<td>5</td>
</tr>
<tr>
<td>Test_1 – Midterm Exam</td>
<td>110</td>
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<tr>
<td>Test_2 – Final Exam</td>
<td>110</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>500</strong></td>
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**Grading Scale:**

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<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
<th>Point System</th>
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<tbody>
<tr>
<td>A</td>
<td>90% - 100%</td>
<td>450 - 500</td>
</tr>
<tr>
<td>B</td>
<td>80% - 89%</td>
<td>400 - 449</td>
</tr>
<tr>
<td>C</td>
<td>70% - 79%</td>
<td>350 - 399</td>
</tr>
<tr>
<td>D</td>
<td>60% - 69%</td>
<td>300 - 349</td>
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Withdrawal Policy:
The last day to withdraw without academic penalty is shown on the course schedule. Ceasing to attend course via D2L or oral notice thereof DOES NOT constitute official withdrawal from the course. Students who simply stop participating course weekly via D2L without officially withdrawing usually are assigned failing grades. Students wishing to withdraw after the scheduled change period (add/drop) must obtain and complete a withdrawal form from the Academic Services Department in the Registrar's Office.

Incomplete Policy:
I—The grade of “I” denotes an incomplete grade for the course, and will be awarded only when the student has done satisfactory work up to the last two weeks of the semester, but for nonacademic reasons beyond his/her control is unable to meet the full requirements of the course. A grade of “I” must be removed (by completing the course requirements) within one calendar year from the end of the semester in which the “I” was originally assigned. http://www.kennesaw.edu/foreignlanguage/facultyinfo/IncompletePolicy.html

Enrollment Policy:
Only those students who are enrolled in the online course may visit the lectures, receive assignments, take quizzes and exams, and receive a grade for the course via D2L. If a student is administratively withdrawn from this course, they will not be permitted to participate in any online course activities nor will they receive any grade for the course.

Email Messages:
Remember to put the course name and section number in the subject field of every e-mail message that you send me. E-mail messages that are missing this information are likely to be automatically redirected to a folder I seldom check.

Diversity Statement:
All courses offered by the Computer Science department will adhere to the KSU policy that prohibits discrimination on the basis of race, religion, color, sex, age, disability, national origin, or sexual orientation.

Disability Statement:
Any student with a documented disability needing academic adjustments is requested to notify the instructor as early in the semester as possible, and must do so before the mid-term exam. Verification from KSU disabled Student Support Services is required. All discussions will remain confidential. http://www.kennesaw.edu/stu_dev/dsss/dsss.html

Student Email and Web Account Access:
KSU is moving towards a central authentication server that will allow one username and password to be used by all KSU users to access an increasing variety of applications (email, D2L etc.) This unified network identification is referred to as your "NetID". The new source for university-provided email and web space for students will be located at students.kennesaw.edu All students will have access to this system once they have established their NetID.

How to Activate your NetID:
To activate your NetID go to http://netid.kennesaw.edu and click on "Sign up Now!" link. You will be asked to provide information to verify your identity and set your password. This password will only be for NETID enabled applications.

How to Look Up a NetID:
After you have activated your NetID, you can look up other users by logging into http://netid.kennesaw.edu and clicking on Directory Search.

How to Send Email:
For student email, your NetID in combination with the new email address would look like netid@students.kennesaw.edu.
**Web Address:**
For student web address, your NETID in combination with the new server address would look like http://students.kennesaw.edu/~netid.
If you have problems please call the Service Desk at ext. 6999 or e-mail service@kennesaw.edu.

**Acquiring Final Grades:**
In an effort to better utilize our technology resources, Kennesaw State University has instituted the reporting of end of term grades by phone. This is in addition to the web version of grades, which has been in effect for several terms. All current semester term students may call 770-420-4315 and select Option Number 4 to secure their end of term grades. With this new development, printed grade reports will not be mailed at the end of the term. Students needing verification of grades or enrollment should request either an official transcript or enrollment verification through the Office of the Registrar.

Any student with a documented disability needing academic adjustments is requested to notify the instructor as early in the semester as possible, and must do so before the mid-term exam. Verification from KSU disabled Student Support Services is required. All discussions will remain confidential.

**Academic Integrity Statement:**
Every KSU student is responsible for upholding the provisions of the Student Code of Conduct, as published in the Undergraduate and Graduate Catalogs. Section II of the Student Code of Conduct addresses the University's policy on academic honesty, including provisions regarding plagiarism and cheating, unauthorized access to University materials, misrepresentation/falsification of University records or academic work, malicious removal, retention, or destruction of library materials, malicious/intentional misuse of computer facilities and/or services, and misuse of student identification cards. Incidents of alleged academic misconduct will be handled through the established procedures of the University Judiciary Program, which includes either an "informal" resolution by a faculty member, resulting in a grade adjustment, or a formal hearing procedure, which may subject a student to the Code of Conduct's minimum one semester suspension requirement.

Students are encouraged to study together and to work together on class assignments and lab exercises; however, the provisions of the STUDENT CONDUCT REGULATIONS, II. Academic Honesty, KSC Undergraduate Catalog will be strictly enforced in this class.

Frequently students will be provided with "take-home" exams or exercises. It is the student's responsibility to ensure they fully understand to what extent they may collaborate or discuss content with other students. No exam work may be performed with the assistance of others or outside material unless specifically instructed as permissible. If an exam or assignment is designated "no outside assistance" this includes, but is not limited to, peers, books, publications, the Internet and the WWW. If a student is instructed to provide citations for sources, proper use of citation support is expected.
### Tentative Course Schedule: Subject to Change

Dr. Sarah North  
snorth@kennesaw.edu

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<tr>
<th>Weeks</th>
<th>Due Dates</th>
<th>Course Assignments</th>
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| 1     | **Module_1**<br>Module Tasks Due June 12 | Welcome - Login to [http://D2L.kennesaw.edu/](http://D2L.kennesaw.edu/) and overview Course Start here  
**Module 1 - Part I: Introduction**  
Chapter 1: Usability of Interactive Systems  
Chapter 2: Guidelines, Principles, and Theories  
Discussion & Assignment_1 - [Refer to D2L](http://D2L.kennesaw.edu/) |
| 2     | **Module_2**<br>Module Tasks Due June 19 | **Module 2 - Part II: Development Process**  
Chapter 3: Managing Design Processes; Social, Ethical, and Legal Issues  
Chapter 4: Evaluating Interface Designs; Control of Psychological Issues  
Discussion & Assignment_2 - [Refer to D2L](http://D2L.kennesaw.edu/) |
| 3     | **Module_3**<br>Module Tasks Due June 26 | **Module 3 - Part III: Interaction Styles**  
Chapter 5: Direct Manipulation and Virtual Environments  
Chapter 6: Menu Selection, Form Fillin, and Dialog Boxes  
Discussion & Assignment_3 - [Refer to D2L](http://D2L.kennesaw.edu/) |
| 4     | **Module_4**<br>Module Tasks Due July 3  
**Test_1** | **Module 4**  
Chapter 7: Command and Natural Languages  
Chapter 8: Interaction Devices  
Discussion & Assignment_4 Due - [Refer to D2L](http://D2L.kennesaw.edu/)  
Test #1 – Ch. 1 – Ch. 8 - [Refer to D2L](http://D2L.kennesaw.edu/) |
| 5     | **Module_5**<br>Module Tasks Due July 10 | **Module 5**  
Chapter 9: Collaboration and Social Media Participation  
Discussion & Assignment_5 - [Refer to D2L](http://D2L.kennesaw.edu/) |
| 6     | **Module_6**<br>Module Tasks Due July 17 | **Module 6 - Part IV: Design Issues**  
Chapter 12: User Documentation and Online Help  
Discussion & Assignment_6 - [Refer to D2L](http://D2L.kennesaw.edu/) |
| 7     | **Module_7**<br>Module Tasks Due July 21 | **Module 7**  
Chapter 13: Information Search  
Discussion & Assignment_7 - [Refer to D2L](http://D2L.kennesaw.edu/) |
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<thead>
<tr>
<th>Date</th>
<th>Module 8</th>
<th>Details</th>
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<tr>
<td>July 24</td>
<td>Module_8</td>
<td>Afterword: Societal and Individual Impact of User Interfaces</td>
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<tr>
<td>Test_2</td>
<td>Discussion &amp; Assignment_8 – 2-page Individual paper - Refer to D2L</td>
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<td>July 25</td>
<td>Test #2 – Ch. 1 – Ch. 13 - Refer to D2L</td>
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