Semester: Fall 2005  Credits: 3
Class Time: T/Th 11:00 am- 12:15 pm  Room: E-236
Instructor: Mr. Jesse Middaugh  Office: E-335 (new office)
E-mail: jlm10@psu.edu / jmiddaugh@psu.edu
Phone: 948-6153
(place course and section number on email subject line)
Office Hrs: T 09:00 am – 11:00 am / Th 10:00 am – 11:00 am / T/Th 3:15 pm – 4:00 pm
T/Th 1:00 pm – 2:00 pm by appointment
Or by appointment (If you make an appointment, please be prompt.)

Course Description:
This is a project-based course emphasizing user interface development topics such as information processing issues, development and testing techniques, and application requirements. The study of interface design emphasizes application and user requirements, development and testing techniques, and information processing issues. In order to design an information system, the designer must undertake a thorough task analysis to determine the proper functionality of the system. The designer must give attention to system reliability, security, standardization, portability, integration, and many other issues. While these issues are important, they do not directly address the needs of the system's users. The system's interface is the vehicle with which users interact with the system. It is, in essence, the system from the users' standpoint. A poorly-designed interface will deter people from using the system, while a well-designed interface will encourage system usage.

Course Resources:
Required Texts:
Designing the User Interface; by Ben Shneiderman, and Catherine Plaisant; Addison Wesley; 2005; ISBN 0-321-19786-0.

Supplementary Material:
- 2 Folder or large manila envelopes to hold printouts and disks for assignments
  - clearly marked with your name, section number, and the assignment on the outside
  - media must be secure inside folder or envelope.
- IT IS YOUR RESPONSIBILITY TO ENSURE THAT THE MEDIA IS SECURE INSIDE THE FOLDER
- 2 CD-RW (or USB drive)
- One folder and CD-RW is for your backup - always maintain backup material – You will use these later in the semester

Additional Resources:
<table>
<thead>
<tr>
<th>CBT / Tutorials</th>
<th><a href="http://wbt.cac.psu.edu">http://wbt.cac.psu.edu</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Angel</td>
<td><a href="https://cms.psu.edu">https://cms.psu.edu</a></td>
</tr>
<tr>
<td>Additional Files</td>
<td><a href="http://www.course.com">http://www.course.com</a></td>
</tr>
<tr>
<td>Penn State Policies</td>
<td><a href="http://www.psu.edu/ufs/policies">www.psu.edu/ufs/policies</a></td>
</tr>
</tbody>
</table>

Prerequisites: for (IST 413) IST 331  for (INFSY 413) INFSY 307 and INFSY 445

Course Overview: Project-based course emphasizing user interface development topics such as information processing issues, development and testing techniques, and application requirements. This course will cover the following major topics:
- Introduction to Understanding the User
- Introduction to Interactive Design
- Introduction to visual / object-oriented / event-driven programming
**Course Objectives:**
- To explain the principles of Interactive Design (ID)
- To build effective, flexible, and robust user interfaces
  - Using Visual Basic.Net that facilitates graphical user interface principles and design
- To be able to correctly design and write user interfaces using the ID principles
- To solve problems and develop solutions in a team environment
- To build effective, flexible, and robust user interfaces
- To employ the development paradigm of programming environments used to build user interfaces
- To translate system requirements into appropriate human/computer interaction sequences
- To choose mode, media, and device for input/output instantiation appropriate for the user population, the application requirements, and the processing capabilities of the system

**Grades:**
The following grade distribution will be used in this class:

<table>
<thead>
<tr>
<th>Topic</th>
<th>Percentage</th>
<th>Grade*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam 1</td>
<td>20%</td>
<td>95.00 and above A</td>
</tr>
<tr>
<td>Exam 2</td>
<td>20%</td>
<td>90.00 to 94.99 A-</td>
</tr>
<tr>
<td>Final Exam</td>
<td>20%</td>
<td>87.70 to 89.99 B+</td>
</tr>
<tr>
<td>Team Design Project/Presentation</td>
<td>20%</td>
<td>83.33 - 87.69 B</td>
</tr>
<tr>
<td>Labs / Quizzes / Homework / Class Participation**</td>
<td>10%</td>
<td>80.00 to 83.32 B-</td>
</tr>
<tr>
<td>Topical Presentation and Executive Summary</td>
<td>10%</td>
<td>75.00 to 79.99 C+</td>
</tr>
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<td></td>
<td></td>
<td>70.00 to 74.99 C</td>
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<td></td>
<td></td>
<td>60.00 to 69.99 D</td>
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<td>Below 60.00 F</td>
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</table>

* The instructor reserves the right to grade on curve.
** Class participation includes class attendance.

**CLASS ATTENDANCE IS MANDITORY**

Each team member must contribute to each portion of the project. Non-Contributing member will receive a zero for that portion of the project

**Homework:**
Homework assignments will be assigned in class or through CMS (Course Management System / ANGEL).

**Labs:**
Labs will be Microsoft Visual Basic Dot Net exercise to enhance the user design principles.
Depending on the pace of the class, we may have lab time for class assignments and help sessions.

All homework and labs must be completed to successfully pass this course.
No homework or lab will be accepted after others have been graded and returned (usually within a week).

**Topical Presentation:**
The topical presentation is intended to enhance the material covered in the course. Developing presentation skills is important for everyone, plus it’s a good way to share information. Each student will prepare and present one individual presentation. The individual presentations must include at least five outside references (not the Shneiderman and Plaisant text), noted in footnotes and a reference page. Two of the references must be cited from a journal or current magazine article. Hand in a hard copy of your presentation notes, including a bibliography, or include the information in your handouts/visuals, if you plan to use any. You will select one topic from a selected chapter in the text and research the topic. Then you will prepare and present a 15-minute presentation on your chosen topic. Presentations will be evaluated based on content, delivery, and audience response. Your presentation is due on the evening when we discuss your selected topic. NO LATE TOPICS WILL BE ACCEPTED –unless in case of at least 3-days prior notice or an emergency.

**Deliverables:**
(Hardcopy of both Executive Summary and ppt presented to instructor – Softcopy uploaded to ANGEL)
- PowerPoint Presentation
  - 15 minutes
  - Submit both hardcopy and electronic copy
- Two-Page Executive Summary of the topical
- Include Sited References
  - APA style (see [http://www.apa.org](http://www.apa.org))
Curriculum Included in the Content:

Collaborative Skills:
• Teams collaborate to complete two user interface assignments.
• A final project is developed and presented to the class by teams of students.

Communication Skills:
• Every student is required to submit one written project report:
• Every student participates in the oral presentation of a final team project plus an individual user interface research project.
• Oral and Written – Every student is required to submit at least one written reports (not including exams, tests, quizzes, or commented programs) of typically two-four pages and to make two oral presentations of typically 15 – 30 minute’s duration.

Ethical, Legal, Security and Global Policy Issues:
• Every student is required to address the security implications of their application and protection of the application’s data.
• Topics covered or addressed

<table>
<thead>
<tr>
<th>Topic</th>
<th>How used</th>
<th>Techniques</th>
<th>Time</th>
<th>Grade</th>
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</thead>
<tbody>
<tr>
<td>Ethical</td>
<td>Use of hardware, system, and customer information Discussion of code copying</td>
<td>Policies</td>
<td>Include in one class</td>
<td>Papers and Presentations</td>
</tr>
<tr>
<td>Legal</td>
<td>Legal requirement of the UI Design</td>
<td>Policies</td>
<td>Include in one class</td>
<td>Papers and Presentations</td>
</tr>
<tr>
<td>Security</td>
<td>Information System Protection</td>
<td>Hardware protection</td>
<td>Include in one class</td>
<td>Papers and Presentations</td>
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<td></td>
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<td>Software protection</td>
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<td>Network protection</td>
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<td>Data protection</td>
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Global N/A N/A N/A N/A

Professional Responsibility/Development:
• An emphasis is placed on the proper design of user interfaces in an effort to recognize professional requirements for software design and development.
Group Project:
The emphasis on this project is the Interactive User Interface Design. Students will be divided into groups or teams and choose a functional area of business (see table below). The team will research this business function and develop a small business application prototype reflecting how to build a user interface for a functional area. The project will also consist of the principle learned in the class. The final presentation will be an in-depth presentation revealing additional principle of user interface design and presenting your systems design.

### Functional Business Areas

<table>
<thead>
<tr>
<th>Accounting / Finance</th>
<th>Marketing / Sales</th>
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<tbody>
<tr>
<td>Human Resources</td>
<td>Production / Manufacturing</td>
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<tr>
<td>Customer Service</td>
<td>Inventory Management</td>
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<td>Quality Control</td>
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</table>

### Deliverables:
- Bulleted Executive Summary containing:
  - Research and Explain the ID principle of your design
  - Screen Captures of your design
    - <Alt><PrtScr> of active window and paste into document
    - <PrtScr> or entire screen and paste into document
    - Submit both hardcopy and electronic copy prior to presenting
- Application (Vb.Net)
- PowerPoint Presentation
  - 20 minutes
  - Submit both hardcopy and electronic copy prior to presenting
- Include Sited References (at least 2 cited references per person)
  - APA style (see [http://www.apa.org](http://www.apa.org))

Each member of the team is responsible for the following:
- Creating and coding at least one screen that interacts with an access database
- Researching and explaining the ID principle of your design
- Non-Contributing member will receive a zero for that portion of the project

### Project Updates:
- Status report of the project:
  - Uploaded to Angel
- Five-minute presentation on the status for your research and project
## Class Schedule and Assignment**

<table>
<thead>
<tr>
<th>Wk</th>
<th>Week of</th>
<th>Topics</th>
<th>Assignments</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Shneiderman</td>
</tr>
<tr>
<td>1</td>
<td>Aug 29</td>
<td>Intro to</td>
<td>Chapter 1</td>
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<td>User Interface Class</td>
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<td></td>
<td>Interactive Systems and Design</td>
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<tr>
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<td></td>
<td>Visual Basic.NET (Getting Started with VB.Net)</td>
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<tr>
<td>2</td>
<td>Sept 5</td>
<td>Guidelines, Principles and Theories</td>
<td>Chapter 2</td>
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<tr>
<td>3</td>
<td>Sept 12</td>
<td>Managing Design Processes</td>
<td>Chapter 3</td>
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<td>Intro to Data Types and Variables</td>
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<tr>
<td>4</td>
<td>Sept 19</td>
<td>Evaluating Interface Designs (Testing)</td>
<td>Chapter 4</td>
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<td>Intro to DB Processing</td>
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<td>5</td>
<td>Sept 26</td>
<td>Database Design</td>
<td>Appendix B</td>
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<td></td>
<td>Exam #1 (Sept 29th)</td>
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<tr>
<td>6</td>
<td>Oct 3</td>
<td>Direct Manipulation And Virtual Environments</td>
<td>Chapter 6</td>
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<tr>
<td>7</td>
<td>Oct 10</td>
<td>Prototyping and Construction</td>
<td>Chapter 6</td>
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<tr>
<td>8</td>
<td>Oct 17</td>
<td>Menu Selection, Form Fillin and Dialog Boxes</td>
<td>Chapter 7</td>
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<tr>
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<td>Creating a Menu-Drive Multiple-Document Application</td>
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<td>9</td>
<td>Oct 24</td>
<td>Collaboration</td>
<td>Chapter 10</td>
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<td>Working with Multiple database Tables</td>
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<tr>
<td>10</td>
<td>Oct 31</td>
<td>Displays Small and Large Mobile Computing Interface</td>
<td>Chapter 9</td>
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<td>(with Data Structures)</td>
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<tr>
<td>11</td>
<td>Nov 7</td>
<td>Validating Input with String and Functions</td>
<td>Chapter 12</td>
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<td>Balancing Functions and Fashion</td>
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<tr>
<td>12</td>
<td>Nov 14</td>
<td>Arrays and Lists / Crystal Reports</td>
<td>Chapter 7</td>
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<td>Exam #2 (Nov 17th)</td>
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<tr>
<td>13</td>
<td>Nov 21</td>
<td>Tuesday 11/22 No Class – Follows Friday Schedule</td>
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<td>Thursday 11/24 Thanksgiving – Enjoy your Holiday</td>
<td>Final must be taken on date and time of scheduled final – please verify your schedule</td>
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<tr>
<td>14</td>
<td>Nov 28</td>
<td>Quality of Service Design, User’s Manuals, On-line Help and Tutorials</td>
<td>Chapter 11</td>
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<tr>
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<td></td>
<td>Introduction to ASP.Net</td>
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<tr>
<td>15</td>
<td>Dec 5</td>
<td>Group Presentations</td>
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<td>Review – Question and Answer Session for VB</td>
<td>Final must be taken on date and time of scheduled final – please verify your schedule</td>
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<tr>
<td>16</td>
<td>Dec 12</td>
<td><strong>FINAL EXAM (Cumulative)</strong></td>
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<td>Tues., December 13, 10:00-11:50 a.m.</td>
<td>Final must be taken on date and time of scheduled final – please verify your schedule</td>
</tr>
</tbody>
</table>

Quizzes – Only VB.net only

* The instructor reserves the right to grade on curve.

** Subject to change based upon the pace of the class.

^ Dates indicated on the syllabus are the dates the labs will be assigned (not due)
Project Policies and General Information:

Projects and labs are an essential part of this course. They are the means by which you will learn database design programming concepts. Information regarding project format, grading information, and relevant policies follow.

Policies:
Projects, with the exception of team portions of an assignment, must be the individual work of a student. It is, however, perfectly acceptable to discuss assignments but, no one may share program code. Copying code from others hinders the learning process and therefore, serves no purpose. Violations of this policy will be considered cheating and are subject to Penn State University procedure. It is each student's responsibility to ensure that his/her program code is deleted from the PC in the student lab before leaving the lab after each session. This includes deleting the folder and emptying the recycle bin.

NOTE: In cases of cheating, both parties will be held equally responsible, i.e. both the student who shares code and the student who copied the code.

All projects must be completed (and working) and turned in for a grade. For teamwork, this infers that each member of the team participate according to his/her assigned role. Failure to complete all project assignments will result in an "F" for the semester.

However, if there is a reason for your assignment to be late, discuss this with me. I can be flexible when a student is ill or encounters some difficulty but has been keeping up with his/her assignments. NO ASSIGNMENT WILL BE ACCEPTED ONCE OTHERS ARE GRADED AND RETURNED. Points will be deducted from projects and labs that are not turned in on time.

Class Cancellation:
In case of class cancellation due to weather or other conditions, the class will be notified by ANGEL or group telephone tree at least two hours before the start of class.

Team Projects:
Where applicable, project grades may at the end of the semester be adjusted to include team participation and individual contributions. In other words, a grade on any project may be adjusted up or down based upon my individual observation of teamwork, individual contributions to a team project, and peer evaluation.

Each student will be expected to participate in team projects. This participation will be during regularly scheduled classes or outside of class time.

Note to Students with disabilities: It is Penn State’s policy not to discriminate against qualified students with documented disabilities in its educational programs. If you have a disability-related need for modification in this course, contact the Disability Service Coordinator in the Student Assistance Center (W117 Olmsted; 948-6025).

Tips for Success in IST 413:
The most important things you can do this semester are:

- Attend class regularly. Class attendance in mandatory.
- Participate in interactive class activities. This class is for you, so make it as worthwhile and interesting as possible. We’ll all have a good time and learn something from each other.
- Don’t wait until the last minute to start assignments.
- Take responsibility for your work. I.T. will be your career someday, so apply yourself and learn as much as possible.
- Keep up with homework and class readings.
- Take good notes in class.
- Keep all your work neat and organized.
- Check CMS before class for updates, notes, project specifications, class cancellations, etc. They’ll all be posted throughout the semester.
- Come to me early if you have problems or difficulties this semester. If you miss something early, you’ll have trouble keeping up because the material builds upon itself throughout the semester.
Learning Center Support:
The Learning Center provides tutoring to support your work in this class. The service is free to students. Your visit will be confidential. Visit the website, www.hbg.psu.edu/LearningCenter/, email, call 948-6475, or drop in to Olmsted C-216.

Tutors:
Janice Smith, jes57@psu.edu, is the professional tutor in math/science, and Kathy Brode, kbb3@psu.edu, is the professional tutor in writing. The Learning Center also employs a graduate assistant, part-time writing tutors, and peer tutors. The writing tutors can help you with all areas of your writing, including helping you develop your ideas, offering objective feedback during the drafting process or on completed drafts, and explaining MLA or APA documentation formats.

Small Group Room:
You can sign up to use the small group room in the Learning Center for group projects. It seats 8, has a whiteboard, and 2 PC’s. Contact Mimi at 948-6475, eew3@psu.edu, or stop in to C-216 to schedule a day and time.
Course Conduct:

- Class Attendance is mandatory. If you must miss class, please inform me about the absence prior to the class. Unexcused absences will affect your participation grade. Attendance is a prerequisite to understanding course content. If you miss class, it is your responsibility to find out what work was missed, make up work and also to be responsible for any course related announcements. Students missing class must obtain missed work assignments from other class members. Active learning, team building, and collaboration are principles subscribed to by the Information Systems faculty. Thus, frequent absences from class will impact the final course grade.

- Class will start on time. Please take your seat prior to the start of class.

- No makeup quizzes or exams will be given without prior, legitimate excuse and accompanied by documentary evidence.

- You should attend each class and actively participate in the discussions during class. If you are uncomfortable with public speaking, or if English is not your native language, we should meet in the first week of school to establish ways to make you more comfortable in speaking and interacting with your peers.

- If your class is held in a computer lab, count it a privilege. The computer on your desk is to be used as a class resource. It is not meant to be a personal communication device while class is in session. Thus, you may check email and messages before class, during breaks or after class. You may not check email or AOL Instant Messenger during class.

- For every hour of lecture, I anticipate that you will need to budget about 3 hours of out-of-class time. For every lab session, you may need to budget one-to-two hours of out-of-lab time. This time estimate is a guide and you may need to budget more. For example, if the material is new to you or difficult to comprehend, it may require more of your time.

- You are responsible for all the readings, even if the material is not explicitly covered in class. You should read the class materials prior to class and be prepared to discuss and ask questions about the readings and assignments. You should also re-read the material after class, as not every topic will be covered during class time.

- All work must be completed and turned in at the start of class on the assigned date. No late work will be accepted. Late means after the class has begun. Note that a computer’s failure (including CMS being down for maintenance) is not an excuse.

- All assignment should be computer-printed, double-spaced, on 8.5"x 11" paper. All pages should have 1" margins. Papers should be stapled and collated.

- I read to the fifth mistake. Your grade will be based on what we have read to that point. Mistakes include spelling, grammatical errors, and typos. Carefully proofread your work.

- Your work should be properly referenced and adhere to standards of both academic integrity and proper form. Generally, I prefer the APA style (see http://www.apa.org).

- I expect individual work should be just that – it should be done by you, alone.

- I expect group work should be just that – from the entire group. If I become aware that you are not contributing to your group equally, I will intervene.

- Class participation is my way of assessing your intellectual engagement with the topics we are covering. You can demonstrate this engagement through a number of ways. For example, speaking in class, bringing in to the class relevant material (such as copies of articles) from outside sources, contributing to on-line discussions with peers via CMS, working with the team-members, and visiting me during office hours to discuss material being covered in class.