Syllabus

GUI Programming - COMP 445
1:00 – 2:15 TR Science 207
Fall 2008

Instructor: Frank McCown
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Home Page: http://www.harding.edu/fmccown/ (Syllabus, Outline, class grades, useful links)
Office Hours: Science 208: 11 – 12, 1 – 3 MWF, 4 – 5 TR or by appointment

Course Description

This class focuses on building applications with a graphical user interface (GUI) for the Microsoft Windows operating system although GUI interfaces on other operating systems, mobile devices, and on the Web will be briefly examined. Topics include: the Win32 API, messaging, event-driven programming, dialog boxes, dynamic link libraries, multiple document interfaces, the .NET Framework, and Human Computer Interaction (HCI). The C# and VB .NET programming languages will be utilized to build GUI applications. Prerequisite: COMP 245.

Textbooks: Programming Microsoft Windows Forms by Charles Petzold (2006) . ISBN: 0735621535
GUI Bloopers 2.0: Common User Interface Design Don'ts and Dos by Jeff Johnson (2008). ISBN: 9780123706430

Exams

Two regular exams (each worth 100 points) will be given in class as well as a final comprehensive exam (200 points) covering the entire course and, in more detail, the information presented since the 2nd exam. If you are unable to take an exam as scheduled due to a serious illness or some other emergency, it is **your responsibility** to call me and leave a message **before** the exam or as soon as you are physically able. If an official school function takes you out of class on an exam date, it is your responsibility to make arrangements *one week prior* to the exam as to when you will take the exam. Usually it will be given early, not late.

Programming Projects

Three major programming projects (written in C# and VB.NET) will need to be completed using Visual Studio .NET. You should expect to spend at least six hours on each project. These projects will require you to integrate the information learned in class and from the text books to produce a non-trivial Windows application. All source code should conform to "McCown's Tips to Writing Clean Code" (link available from the class website).

You may work independently on all programs or in pairs (two people only) when permitted. Pair programming has been shown to have a number of benefits including increased personal satisfaction and fewer errors[1]. If you work in pairs, both of you must work together on a *single* computer, and both of you must write *approximately half* of the code. **No code can be written without the other partner present and watching.** Both of you should understand completely what is being written since you will have to complete your exams individually. When you submit a program that has been written in pairs, you must include a printed log listing the dates and times you and your partner met to write the program. If you fail to provide a log or turn in a program that is nearly identical as someone else's will be considered cheating.

[1] See *All I Really Need to Know about Pair Programming I Learned in Kindergarten* (2000) for more information on effectively using pair programming at http://citeseer.ist.psu.edu/williams00all.html.

Quizzes and Assignments

Quizzes over reading assignments will be worth 10 points each. Other 10 point assignments will be given as homework and averaged into the quiz scores. The lowest quiz/assignment score will be dropped when computing the average. All quizzes will be taken on Blackboard at http://elearning.harding.edu before the class period on which the quiz is due. Even if you are absent from class, you are still required to take the quiz.

Class Presentations

Each of you will present a chapter from the GUI Bloopers text to the class. Your presentation should last about 30 minutes, and you should use a PowerPoint slide show to help illustrate your major points. You are also to prepare 3 discussion questions which you will ask during or at the end of your presentation. A grading sheet is attached to the syllabus which shows how I will be grading your presentation- it is roughly equivalent to the grading sheet used in Computing Seminar.

Two days before you present, you will email me 10 multiple choice or T/F questions that I will use to create a quiz for the class.

Sign up for chapters and dates will be on a first-come-first-serve basis by putting your name on the wiki at http://bluwiki.com/go/GuiBloopers.

Extra Credit

You will receive **0.1%** points extra credit added to your final grade for each Computer Seminar that you attend. Seminar meets every Friday at 7:05 am in Science 113. The first seminar will begin around the 3rd week of the semester. There will be approximately 11 seminars, thus allowing you to increase your final grade by 1.1%. See http://www.harding.edu/comp/calendar.html for the complete schedule.

The McChallenge: 1% will be added to your final grade for the completion of a program which will be made available to you later in the semester. The program will be due the Friday before final exams. You can skip the program and still get the 1% added to your final grade if you beat me in a game of basketball, tennis, racquetball, Halo, chess, Trivia Pursuit, or any other sport/game that I know how to play. If you lose, you've still got to write the program to get your 1%. Only one challenge per semester. Come by my office to schedule a time to play.

Grades

Standard letter grades: A = 90-100%, B = 80-89% C = 70-79%, D = 60-69%, F = 0-59%

Final grades will be computed as follows:

Exams:	25%
Projects:	30%
Quizzes and Assignments:	15%
Presentations:	10%
Final Exam:	20%

Important! Keep all of your programs, homework, etc. so if I marked your grade down incorrectly, the problem will be easily resolved. Everything I hand back to you will also be very beneficial when studying for the final.

Late work: A maximum of 10% will be taken off *each day* (not each class period) a program or assignment is late, up to 50%. Every day is counted, including weekends.

Assessment

Harding University, since its charter in 1924, has been strongly committed to providing the best resources and environment for the teaching-learning process. The board, administration, faculty, and staff are wholeheartedly committed to full compliance with all

criteria of the Higher Learning Commission of the North Central Association of Colleges and Schools. The university values continuous, rigorous assessment at every level for its potential to improve student learning and achievement and for its centrality in fulfilling the stated mission of Harding. Thus, a comprehensive assessment program has been developed that includes both the Academic units and the Administrative and Educational Support (AES) units. Specifically, all academic units will be assessed in reference to the following Expanded Statement of Institutional Purpose: **The University provides programs that enable students to acquire essential knowledge, skills, and dispositions in their academic disciplines for successful careers, advanced studies, and servant leadership.**

Assessment of the knowledge, skills, and dispositions of each student for the purpose of assigning a letter grade at the completion of this course will be based on the projects, quizzes, homework assignments, and exams that were described previously in this syllabus. Near the completion of your major in the department of Computer Science, you will be assessed by a comprehensive examination covering core courses in your major, including this course. This examination will influence your final grade in the senior capstone course.

Expectations

1. It is important that you **check your e-mail regularly (everyday)** because I occasionally give hints or corrections to homework assignments via e-mail. This is also the best way to communicate with the class outside of the classroom.

2. I expect every one of you to hold to the **highest standard** of personal conduct and **integrity**... that means you will not cheat on tests or programs. Cheating may result in you being dropped from the class with an F. That doesn't mean you can't help others with their programs; everyone will at some time struggle and need assistance from fellow students. But simply giving someone your source code to copy isn't going to help either of you. **Warning**: Students who "work together" (write one program and each make a copy) on a homework or lab are in danger of having one grade divided between them. Homework and labs are **individual assignments** and are the responsibility of the individual. Only the projects can be written in pairs. Come by during office hours (or we'll arrange a time) for assistance on programs. Also take advantage of the tutor who will be available several times a week.

3. I expect you to adhere to the **dress code** as spelled out in the Student Handbook. This includes (men) removing caps while in class.

4. There is **no food or drink** prohibited in the lab. This is expensive equipment and carpeting that is easily spoiled by an accident.

5. Lab computers may be used during class to **take notes and write programs**. They may not be used for any other purpose including instant messaging, e-mail, surfing the Web, Facebook, games, etc. Students who break this rule will not be allowed to use the lab computers.

You will likely find GUI Programming to be one of the most useful courses for your career in software. Whether programming a standalone application for a desktop, an application for a mobile device, or a web application, you will likely need to personally design and implement some type of GUI interface. The concepts we'll cover in this course will lead you to make better decisions when designing interfaces and produce much more usable software. You can also apply these principles immediately in your senior capstone course.

If you ever need assistance in this class or anything else, please don't hesitate to come by my office or give me a call.

Students with Disabilities

It is the policy for Harding University to accommodate students with disabilities, pursuant to federal and state law. Therefore, any student with a *documented disability* condition (e.g. physical, learning, psychological, vision, hearing, etc.) who needs to arrange reasonable accommodations, must contact the instructor and the Disabilities Office at the *beginning* of each semester. (If the diagnosis of the disability occurs during the academic year, the student must self-identify with the Disabilities Director *as soon as possible* in order to get academic accommodations in place for the remainder of the semester.) The Disabilities Office is located in Room 102 of the Lee Academic Center, telephone, (501) 279-4019.

Schedule

The following schedule is subject to change but gives you an idea of how the class will progress:

Week 1 Introduction
History of GUIs
Win32 API
.NET Programming and C#

Week 2 Chap 1 – Creating Apps
Chap 2 –Control Cornucopia
Program 1: Door Prize

Week 3 Common dialog boxes
Animation

Week 4 Human Computer Interaction
Chap 1 (Bloopers)
Chap 2 (Bloopers)

Week 5 Review for exam
Exam 1

Week 6 Intro to VB.NET
Chap 4 – Custom Controls

Week 7 Chap 5 – Cruisin' the Strip
Chap 6 – Data Binding
Program 2: Media Player

Week 8 Model-View-Controller
Chap 3 (Bloopers)
Chap 4 (Bloopers)

Week 9 Misc VB.NET topics

Week 10 Slack
Review for exam

Week 11 **Exam 2**
Chap 5 (Bloopers)
Chap 6 (Bloopers)

Week 12 Intro to mobile app dev
.NET Compact Framework

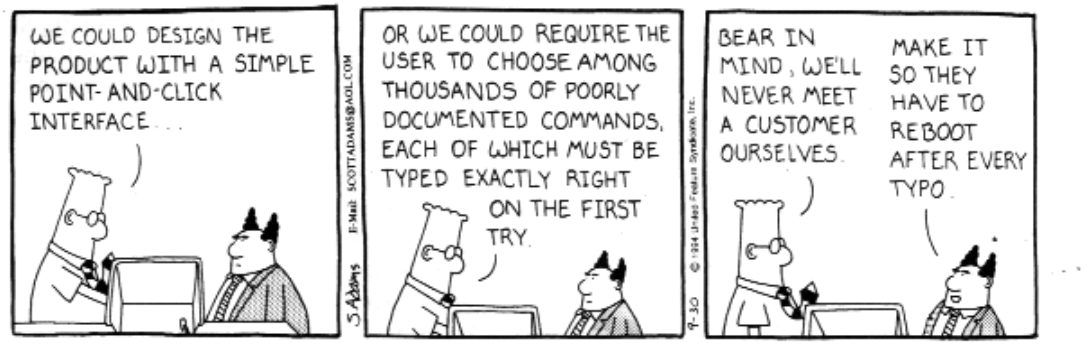
Week 13 Program 3: Mobile app
Chap 7 (Bloopers)

Thanksgiving Break

Week 14 Chap 8 (Bloopers)
Misc. mobile topics

Week 15 Review for Final Exam

Week 16 **Final Exam**



GUI Bloopers Presentation Grading Sheet

Name of Student _____

Date _____ Title of Presentation

	Possible	Given
Presentation Content (40%)		
Thorough coverage of the topic (breadth)	10	_____
Sufficient details supplied (depth)	10	_____
Relevance of all material presented	5	_____
Technical aspects adequately explained	5	_____
Obvious structure and organization	5	_____
Transitions and connections between topics	5	_____
Oral Presentation Mechanics (20%)		
Voice audibly projected	4	_____
Pace neither too slow nor too fast	4	_____
Both speakers talk 15-20 minutes each	4	_____
Proper grammar, pronunciation, and enunciation	4	_____
Smooth and natural flow, enthusiasm and confidence	4	_____
Visual Presentation Mechanics (20%)		
Appropriate number of electronic slides	4	_____
Relevant, succinct, and concise text on slides	4	_____
Appropriate font, background, and layout	4	_____
Correct grammar and spelling	4	_____
Relevant and enlightening graphics where needed	4	_____
Discussion Questions (10%)		
3 questions	5	_____
Questions produced useful discussion	5	_____
Quiz Questions (10%)		
10 appropriate multiple choice and T/F questions	10	_____
Deduction if not turned in 48 hours before talk	-5	_____
	===	======
Totals	100	_____

Comments: