

Syllabus

GUI Programming - COMP 445

10:00 – 11:15 TR Science 207

Fall 2007

Instructor: Frank McCown
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Home Page: <http://www.harding.edu/fmccown/> (Syllabus, Outline, class grades, useful links)
Office Hours: Sci 208: 10 – 11, 3 – 4 MWF and 2 – 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, window creation and management, dialog boxes, dynamic link libraries, multiple document interfaces, RAD tools, the .NET Framework, and Human Computer Interaction (HCI). The C#, VB .NET, and Java 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: Don'ts and Do's for Software Developers and Web Designers](#) by Jeff Johnson (2000). ISBN: 1558605827

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#, VB.NET, and Java) will need to be completed using Visual Studio .NET and Eclipse. 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" (a separate hand-out).

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 WebCT at <http://webct.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.

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:	35%
Quizzes and Assignments:	20%
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.

Comments

Of course 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 that person learn and certainly will hurt them in the long run. If you are unsure if your helping someone constitutes as cheating, please talk to me about it.

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 errors¹. 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.

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,

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>.

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 and the Win32 API .NET Programming and C#	Week 9	Misc VB.NET topics
Week 2	Chap 1 – Creating Applications Chap 2 – The Control Cornucopia Program 1: Door Prize	Week 10	Slack Review for exam
Week 3	Common dialog boxes Animation	Week 11	Exam 2
Week 4	Human Computer Interaction Chap 1 (Bloopers) – First Principles Chap 2 (Bloopers) – GUI Component Bloopers	Week 12	Intro to GUI development with Java
Week 5	Review for exam Exam 1	Week 13	Model-View-Controller Program 3: Java
Week 6	Intro to VB.NET Chap 4 – Custom Controls	Thanksgiving Break	
Week 7	Chap 5 – Cruisin’ the Strip Chap 6 – Data Binding and Data Views shapes Program 2: Media Player	Week 14	Chap 5 (Bloopers) – Interaction Bloopers Misc. Java GUI topics
Week 8	Chap 3 (Bloopers) – Layout and Appearance Bloopers Chap 4 (Bloopers) – Textual Bloopers	Week 15	Mac and Linux GUI interfaces Web interfaces Mobile device interfaces Review for Final Exam
		Week 16	Final Exam Mon 10:30 am – 12:00 pm



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