

## Syllabus

GUI Programming - COMP 445

3:00 – 4:15 MW Science 207

Fall 2012

**Instructor:** Frank McCown  
**Contact:** 501-279-4826, HU Box 10764, fmccown@harding.edu  
**Home Page:** <http://www.harding.edu/fmccown/classes/comp445-f12/> (Syllabus, useful links)  
**Office Hours:** Science 208: 2 – 3 MW, 2 – 5 TR, 2 – 4 F, 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 also be examined. Topics include: event-driven programming, Win32 API, dialog boxes and standard GUI controls, dynamic link libraries, .NET Framework, Windows Presentation Foundation, and Human Computer Interaction (HCI). The C# and VB .NET programming languages will be used to build GUI applications. Prerequisite: COMP 245.

Textbooks: [C# 2010 for Programmers, 4th Edition](#) by Deitel & Deitel (2010) . ISBN: 0132618206 (Recommended)  
[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 2010. You should expect to spend a significant amount of time 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<sup>1</sup>. 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 to Easel that has been written in pairs, you must put comments in your code indicating the names of both programmers. Only one student needs to submit their program.

---

<sup>1</sup> 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. All quizzes will be taken on Canvas *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 student 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. Rather than rehash the contents of the entire chapter, pick out a few of the major points and elaborate on them; add some of your own investigation by finding similar examples or extra information (perhaps from research you find online) that elaborates on the topic. When preparing your presentation, think of something that you can add that is not in the book... remember that all of your classmates have (supposedly) read the chapter you are presenting on, so you need to pick out something new to keep their interest. You should also prepare **3 discussion questions** which you will ask during or at the end of your presentation. These questions should lead to meaningful discussion, not just an obvious answer. Questions about controversial topics usually elicit the best discussion. The grading sheet for your presentation is available from the class web page.

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

**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 still may complete the program to get your 1%. Only one challenge per semester, and all challenges must be made *before* the final week of class. Come by my office to schedule a time to play.

## Grades

Final grades will be computed as follows:

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

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

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. Nothing late more than 1 week will be accepted.

## 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. Notes for each day will be made available to you. They are usually available the evening before the next day of class. If you want to print them out, please do so *before class, not during class* so you don't disrupt others. And please print them out using a small font to save paper.
2. 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. **Do not** IM me unless the expected response is a one-liner (e.g., Are you in your office?). If you need help with a program, IM is especially inefficient... better to come by my office.
3. 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.
4. Please adhere to the **dress code** as spelled out in the Student Handbook. This includes (men) removing caps while in class. Please wear shoes to class (flip flops are OK).
5. There is **no food or drink** permitted in the lab. This is expensive equipment and carpeting that is easily spoiled by an accident.
6. 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.
7. Silence your cell phones.

You will likely find GUI Programming to be one of the most useful courses for your career in software development. 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, and psychological) 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 205 of the Student 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 comp interfaces Win32 API and event basics	Week 6	Intro to VB.NET Control overview Custom Controls	Week 12	XAML Windows Phone 7 Laying out controls Event handling
Week 2	.NET Programming and C# Events and delegates	Week 7	XML and data storage Program 2: Media Player Chap 3 (Bloopers)	Week 13	Program 3: WPF app Chap 7 (Bloopers)
Week 3	Menus Common dialog boxes Basic animation	Week 8	Model-View-Controller Chap 4 (Bloopers)	<b>Thanksgiving Break</b>	
Week 4	Program 1: Door Prize Chap 1 (Bloopers)	Week 9	Misc VB.NET topics	Week 14	Chap 8 (Bloopers) Mobile device interfaces
Week 5	Chap 2 (Bloopers) <b>Exam 1</b>	Week 10	Chap 5 (Bloopers) <b>Exam 2</b>	Week 15	Review for Final Exam
		Week 11	Chap 6 (Bloopers) Windows Presentation Foundation (WPF)	Week 16	<b>Final Exam</b>



DILBERT reprinted by permission of United Feature Syndicate, Inc.