

Department of Electrical & Computer Engineering  
Florida International University  
Spring 2019

<b>Classroom</b>	:	EC 2830
<b>Class Time</b>	:	8:00 am—9:15 am (T & R)
<b>Faculty</b>	:	Dr. Alexander Pons
<b>Office Hours</b>	:	T & R 10:00-12:00 am or by Appointment
<b>Office</b>	:	EC – 3145
<b>Phone</b>	:	305.348.7253
<b>Email</b>	:	<a href="mailto:apons@fiu.edu">apons@fiu.edu</a>
<b>Prerequisite</b>	:	EEL 4714 Introduction to Programming Embedded System and EEL 4740 Embedded Computing
<b>Textbook</b>	:	Julian Smart and Kevin Hock with Stefan Csomor Cross-Platform GUI Programming with wxWidgets ISBN 0-13-147381-6 Prentice Hall <a href="http://www.wxwidgets.org/docs/book/index.htm">http://www.wxwidgets.org/docs/book/index.htm</a>

### Course Description

Graphical user interface (GUI) for embedded system included elements and style, events, component and object oriented user interface models, and graphical application programming issues. (3 Credits)

### Course Objectives

Through successful completion of the course, the student will:  
Understand GUI theory and be able to practice it.  
Understand and be able to analyze problem and develop a GUI, especially for embedded computer system.  
Be able to handle embedded GUI development project.

### Topics Covered

1. Introduction to GUI Programming
2. Frame
3. Event Handling
4. Window Basics

5. Drawing and Printing
6. Handling Input
7. Sizers
8. Standard Dialogs
9. Custom Dialogs
10. Images
11. Clipboard
12. Drag and Drop
13. GUI data structure
14. Files and Streams
15. Sockets and Multithreading

### **Relationship of course to program objectives**

In this course, the student will have to show:

1. An ability to apply knowledge of mathematics, science, and engineering,
2. an ability to design and conduct experiments, as well as to analyze and interpret data,
3. an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability,
4. an ability to identify, formulate, and solve engineering problems (homework),
5. the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
6. an ability to communicate effectively (through teamwork),
7. an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice,
8. a knowledge of contemporary issues,
9. a knowledge of advanced mathematics.

### **Tentative Grading Scale**

<b>Grading Scale:</b>		
<b>A</b>	<b>95-100</b>	<b>"Florida International University is a community dedicated to generating and imparting knowledge through excellent teaching and research, the rigorous and respectful exchange of ideas, and community service. All students should respect the right of others to have an equitable opportunity to learn and honestly to demonstrate the quality of their learning. Therefore, all students are expected to adhere to a standard of academic conduct, which demonstrates respect for themselves, their fellow students, and the educational mission of the University. All students are deemed by the University to understand that if they are found responsible for academic misconduct, they will be subject to the Academic Misconduct procedures and sanctions, as outlined in the Student Handbook."</b>
<b>A-</b>	<b>90-94</b>	
<b>B+</b>	<b>86-89</b>	
<b>B</b>	<b>82-85</b>	
<b>B-</b>	<b>78-81</b>	
<b>C+</b>	<b>74-77</b>	
<b>C</b>	<b>70-73</b>	
<b>D</b>	<b>69-60</b>	
<b>F</b>	<b>0-59</b>	

## Grading Scheme

<b>Assignments</b>	<b>20%</b>
<b>Attendance/Quizzes</b>	<b>5%</b>
<b>Midterm (no make-up)</b>	<b>30%</b>
<b>Final Exam (no make-up)</b>	<b>30%</b>
<b>Project</b>	<b>15%</b>
<b>Total</b>	<b>100%</b>

## Project Details

The project will consist of performing all of the development phases of Requirement Analysis, Design, Implementation, testing and deployment to the embedded platform. The completed project will consist of all of the mentioned documentation, including a user manual. A completed fully functional application executable must be submitted in conjunction with all documentation. The application is to execute on embedded environment according to the in class provided specifications.

## University's Code of Academic Integrity

Florida International University is a community dedicated to generating and imparting knowledge through excellent teaching and research, the rigorous and respectful exchange of ideas, and community service. All students should respect the right of others to have an equitable opportunity to learn and honestly to demonstrate the quality of their learning. Therefore, all students are expected to adhere to a standard of academic conduct, which demonstrates respect for themselves, their fellow students, and the educational Mission of the University. All students are deemed by the University to understand that if they are found responsible for academic misconduct, they will be subject to the Academic Misconduct procedures and sanctions, as outlined in the Student Handbook.

More information can be found at [http://academic.fiu.edu/academic\\_misconduct.html](http://academic.fiu.edu/academic_misconduct.html)

## Department Regulations Concerning Incomplete Grades

To qualify for an Incomplete, a student:

1. Must contact (e.g., phone, email, etc.) the instructor or secretary before or during missed portion of class.
2. Must be passing the course prior to that part of the course that is not completed
3. Must make up the incomplete work through the instructor of the course
4. Must see the Instructor. All missed work must be finished before last two weeks of the following term.

## University policies on sexual harassment, and religious holidays, and information on services for students with disabilities

Please visit the following websites:

<http://academic.fiu.edu/>

<http://drc.fiu.edu>

## Course Policies

- **Attendance:** Attendance in the course is **mandatory** and student is not allowed to miss any class during the semester. There will be a **penalty** for missing classes and it may affect your final grade.
- **Academic Misconduct:** For work submitted, it is expected that each student will submit their own original work. Any evidence of duplication, cheating or plagiarism will result at least a failing grade for the course.
- **Unexcused Absences:** Two unexcused absences are permitted during the term. More than two will result in the loss of points from your final grade. (1 point per absence above two, 3 points per absence above 5).
- **Excused Absences:** Only emergency medical situations or extenuating circumstances are excused with proper documentation. After reviewing documentation you are required to email a description of the excuse and absence dates as a written record to [apons@fiu.edu](mailto:apons@fiu.edu).
- **On Time:** As in the workplace, on time arrival and preparation are required. Two “lates” are equivalent to one absence. (Leaving class early is counted the same as tardy.)
- **Deadlines:** Assignments are due at the beginning of the class period on the date specified. Assignments submitted late (within 1 week) will receive half credit.
- To get assistance try to see me by an appointment.
- Students are encouraged to ask questions and to discuss course topics with the instructor and with each other.
- **Any work submitted should display Panther ID number and should be signed, as the students’ own work, and that no unauthorized help was obtained.**
- Cell phones, communicators, MP3 players, head sets are not allowed to be used in the class.
- **DO NOT** send assignments by email, only when instructed to do so.
- Instructor reserves right to change course materials or dates as necessary.

## Exam policy

1. Make sure to complete the assigned homework in order to do well in the exam.
2. All exams are closed book and closed notes.
3. Use of any electronic device with keyboard is prohibited. This also applies to cellphones with messaging system.
4. No discussion is permitted during the exams.
5. Instructor is not compelled to give credit for something he cannot read or follow logically.
6. Cheating is considered as a serious offense. Students who are caught will receive the appropriate consequences.

## Class Schedule

Week	Date	Weekly Topic
1	1/7	Basic and Fundamental Concepts
2	1/14	Chapter 1: Introduction to GUI Programming
3	1/21	Chapter 2: Frames
4	1/28	Chapter 3 Event Handling
5	2/4	Chapter 4: Window Basics
6	2/11	Chapter 5: Drawing and Printing
7	2/18	Chapter 6: Handling Input
8	2/25	Review/Midterm
9	3/4	Chapter 7: Sizers
10	3/11	Spring Break
11	3/18	Chapter 8: Standard Dialogs and Chapter 9: Custom Dialogs
12	3/25	Chapter 10: Images
13	4/1	Chapters 13 & 14: GUI data Structures and Files
14	4/8	Chapter 17: Multithreading
15	4/15	Chapter 18: Programming with Sockets
16	4/22	Final Exam 7:30am – 9:30am