## Syllabus for Computer Science 345

***Windows Programming***

***Fall 2019***

**Instructor:** Dr. Randy L. Ribler

**Office:** 103 Hobbs, **Phone:** 544-8529

**Class Web Page:** http://ribler\_r.web.lynchburg.edu/cs345

**email:** ribler@lynchburg.edu

**Office Hours:** TuTh 10:00-11:15am

**Required Texts:**

Pro C#7 with .Net, by Andrew Troelsen

**Purpose of Course:**

This course will provide the student with the tools needed to create modern graphical user interfaces. Many programming environments provide an event-driven model (including Visual Basic, Java, C#, C++/CLI, and Android). Students will learn best practices for event-driven programming, gain familiarity with a number of environments that support the event-driven model, and learn about good user-interface design.

**Prerequisite:** CS142 with a B- or better.

**Course Objectives/Learning Outcomes:**

Students will create event-driven programs using a number of platforms.

Students will be able to describe the special problems inherent in event-driven program, and be able to implement programs with a minimum reliance on global data structures..

Students will be able to design a consistent user interface, and incorporate concepts of good user interface design into their programs.

Students will understand message loops, and be able to write message loops for their programs.

Students will be able to add message handlers to their programs to handle particular events such as mouse and keyboard input.

Students will be able to write programs that draw lines and polygons in windows.

Students will be able to write programs that draw text in windows.

Students will be able to change the window coordinate system to best suit a given application.

Students will be able to create dialog boxes and incorporate them into their programs.

Students will be able to create menus and toolbars and incorporate them into their programs.

Students will be able to implement simple 2-dimensional animations using bitmaps.

Students will be able to add basic controls to their programs including radio buttons, combo boxes, pushbuttons, text boxes, and list boxes.

Students will understand and be able to write event-driven programs using C# and at least one other event-driven programming platform.

Students will understand and be able to utilize delegates, interfaces, partial classes, lambda expressions, properties, and other C# and .NET concepts.

Students will be able to create user-interfaces using Windows Forms and Windows Presentation Foundation (WPF).

**Course Requirements:**

**Late Policy:** Assignments should be submitted by 11:59pm on the day that they are due. **Late assignments will lose 5pts/day for a maximum of 30pts after which time they will not be accepted.** .

**Plagiarism:** All work must be your own. While it is fine to ask each other questions concerning general concepts, you may not show each other your programs, incorporate code from programs available on the Internet (without the instructor’s permission), or exchange any program fragments -- not one line of code. If you are having problems completing your assignments, you are encouraged to meet with the instructor.

**Class Conduct:** Students are expected to pay attention in class and treat their peers with courtesy. You are expected to arrive on time and to stay until the completion of the class. Computers must only be used for relevant class work. Texting, emailing, web surfing, playing computer games, and other similar activities are prohibited during class. Failure to comply with this policy will result in the forfeiture of some or all of your class participation grade.

**Evaluation Methods:**

Computer Programs (40%)

Class Participation (5%)

Midterm Exam 1 (25%)

Final Exam (30%)

Students who do not receive at least a “D” on the final will receive no higher than a “D” in the course. Grades will be determined using a weighted average of the z-scores for each assignment. For more details on the grading process, see <http://ericae.net/digests/tm9505.htm>

**Center for Accessibility and Disability Resources**

University of Lynchburg is committed to providing all students equal access to learning opportunities.  The Center for Accessibility and Disability Services (CADR) works with eligible students with disabilities (medical, physical, mental health and cognitive) to make arrangements for appropriate, reasonable accommodations.  Students registered with CADR who receive approved accommodations are ***required to provide letters of accommodation each semester to each professor if they wish to use their accommodations.  A meeting to discuss accommodations the student wishes to implement in individual courses is strongly suggested.*** *Accommodations are not retroactive and begin when the accommodation letter is provided to faculty.*For information about requesting accommodations, please visit <https://www.lynchburg.edu/academics/disability-services/>  (rev 7/1/19)

**Contact Information**

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The student will

* **Inquire**: frame questions that address issues and uncertainties across a range of disciplines. The student will
	+ recognize precise and complete statements of problems.
	+ recognize what information is necessary in order to solve given problems.
	+ ask essential questions about given problems.
	+ ask questions for further study regarding problems and reading assignments.
	+ develop an approach for investigating program requirements.
* **Explore:** investigate issues in depth and detail.
The student will
	+ think creatively about possible solutions to problems.
	+ use data debugging techniques to understand how their programs are performing
	+ comprehend given problems, reading assignments, and the arguments of others.
* **Conclude**: develop informed responses to issues.
The student will
	+ Identify program defects/bugs and determine their causes and solutions.
	+ articulate the cause of the defect
* **Persuade**: convince others of the validity and value of conclusions.
The student will
	+ Show how one approach to a program/problem is better than another
	+ construct effective arguments based in evidence, reason and understanding.
* **Engage:** use knowledge and abilities for the good of self and society.
The student will
	+ work effectively with other members of a group to solve problems and present their solutions.