INFO 2200: Computer Programming II

*Spring 2019*

Department of Information Systems & Technology

College of Engineering and Technology

**Utah Valley University**

**Instructor:**  Kodey Crandall, D.Sc. (Student)

**Office:**  CS 709C

**Office Phone:** 801-863-7573

**Office hours:** Monday 1:00PM-3:30PM

Wednesday 12:00PM-2:00PM (ONLINE)

Thursday 1:00PM-3:30PM

By Appointment

**E-mail:** Preferred method is Canvas Messaging  
I will respond to Canvas messages within **24 hours**   
except on weekends and holidays.

**Alt.** **Email:** [kcrandall@uvu.edu](mailto:kcrandall@uvu.edu) (Please put your class & section in the subject)

**(Optional)**

**Course Text:** Starting out with Visual C#, 4th Edn. Tony Gaddis (2016). Pearson

**Course Website:** <https://uvu.instructure.com/>

# Course Description

This course builds on the concepts covered in INFO 1200 and focuses on object-oriented (OO) design and programming methodologies. The course introduces OO topics including inheritance, polymorphism, encapsulation and interfaces. The course also reviews and expands on topics including collection classes, generics, exception handling, file handling, and more advanced topics such as accessing databases via data sets and LINQ, web services, socket/network programming, and multi-threading. Students will write applications for desktop GUIs and desktop consoles.

Prerequisite: INFO 1200, MAT 1050 or higher

# Course Objectives

Upon successful course completion, students should be able to do the following:

1. Create command line applications with input/output to the console and multi-form GUI-based applications incorporating multiple classes;
2. Create a multi-form application that uses the XAML (Extensible Application Markup Language) syntax to create a Graphical User Interface (GUI).
3. Create an application that correctly utilizes object inheritance and polymorphism and be able to explain how the process works;
4. Explain the issues related to object-oriented programming, including multiple inheritance, abstract classes versus interfaces, and the difference between new and override;
5. Create an application that connects to a database using datasets as well as LINQ and utilizes Entity Framework to create database objects and insert, update, and delete records into the created table;
6. Create a Xamarin application that calls a web service and properly processes the return XML in order to display the return content using Windows Presentation Foundation (WPF) GUI technology.
7. Create a Xamarin application that opens up various webcams around the UVU campus.
8. Incorporate multi-threading into applications and be able to write a server application that communicates through sockets and ports.

# Canvas

Course information including the syllabus, assignments, and notes will be posted on Canvas. NO hard copies of handouts and notes will be made available in class. All assignments will be zipped and turned in on Canvas.

# Software

Students will need access to Visual Studio 2015, or 2017 which can be downloaded from Dreamspark or from the web (VS Community 2017).

# Grading Policy

Points will be earned in the class based on 8 assignments, and two exams. The assignments will make up 40 percent of the grade, class participation 20 percent, and exams together make up 40 percent.

The following table shows point totals and their corresponding letter grades.

|  |  |  |  |
| --- | --- | --- | --- |
| **Percent** | **Grade** | **Percent** | **Grade** |
| 94+ | A | 73-76 | C |
| 90-93 | A- | 70-72 | C- |
| 87-89 | B+ | 67-69 | D+ |
| 83-86 | B | 63-66 | D |
| 80-82 | B- | 60-62 | D- |
| 77-79 | C+ | <60 | E |

# In Class Participation

Each class we will be discussing programming concepts that will prepare you for the assignments. Each in-class participation project will include concepts from the course lectures. These participation projects will be completed in class and will be required for points **LATE Participations** will be accepted up to a week late with a 25 percent penalty.

# Assignments

There will be 8 assignments in this course. Assignments will utilize concepts from the course lectures. Assignments will require the use of collection classes, object inheritance, IO, connecting to databases, accessing web services, crawling the web, and writing a client/server game. **LATE ASSIGNMENTS** will be accepted up to a week late with a 25 percent penalty.

# Exams

There will be two exams given during the semester, a midterm and a final exam. Each exam will have two parts. The first will consist of quiz questions are multiple-choice question and will focus on more advanced demonstration of your understanding of programming understanding **based on your work from** **projects**. The second part will require students to program (using Visual Studio) parts of an application.

The exams will be administered through Canvas using the built-in plugin, Proctorio. This software requires the Chrome browser, a web cam, and a mic. You will take exams at home and you will be required to follow these rules:

1. You must show the desktop, room, surroundings before the exam begins.
2. You must be fully clothed.
3. No other individuals can be in the room with you.
4. You **may not** have help from others or use any resources (including notes, the book, calculators, etc.) on the exams.

**There are no make-up exams unless you have an approved excuse prior to the due date.**

**You must complete the Proctorio Agreement Quiz in Canvas**

# Accommodations

Students who need accommodations because of a disability should contact the UVU Office of Accessibility Services (OAS) in LC 312. To schedule an appointment, or speak with a counselor, call the Office of Accessibility Services at 801-863-8747. For ASL interpreting services, contact Nicole Hemmingsen at [micole.hemmingsen@uvu.edu](mailto:micole.hemmingsen@uvu.edu). For transcription or captioning services, contact Jason McKenna at Jason.mckenna@uvu.edu.

# ABET Accreditation

The Information Systems program at UVU is accredited by the Computing Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET). In addition, the Information Systems and Technology (IS&T) Department has applied to accredit the Information Technology program. According to ABET, “accreditation is proof that a collegiate program has met certain standards necessary to produce graduates who are ready to enter their professions” (http://www.abet.org/why-accreditation-matters/).

The IS&T Department follows strict data collection, curriculum, and assessment standards to maintain ABET accreditation. To ensure both Information Systems and Information Technology programs strive to meet the standardized outcomes, the following outcomes will be addressed but not assessed in this course:

1. An ability to apply knowledge of computing and mathematics appropriate to Information Systems and Technology. [IS, IT]

# Course/Lab Fees

Students taking INFO classes paid course fees to help defray the costs of providing you with the best computer education. These fees help pay a portion of the allocated printouts, file servers, networking infrastructure, lab computers, overhead projectors, support hardware, presentation software, lab computer software, file server software, associated software, etc.

# Academic Honesty

Academic dishonesty will not be tolerated. The penalty for a first offense is failing grade for the assignment or test, and that assignment or test cannot be redone. The penalty for a second offense is course failure, and you will be reported to the IS&T Department Chair, the dean’s office, and Student Advising. Please read the complete ‘Student Rights and Responsibilities’ section in the UVU Catalog. The following statements are derived from that catalog:

“Cheating is the act of using, attempting to use, or providing others with unauthorized information, materials, or study aids in academic work. Cheating includes, but is not limited to, passing examination answers to, or taking examinations for someone else, or preparing or copying others’ academic work.”

Cheating includes copying assignments and assessments from another student, taking screenshots of quizzes and tests, sharing copies of unauthorized screenshots, etc., or using a substantial portion of another student’s work as your own work. In other words, if it appears to the professor that the work of two or more students is substantially the same, sanctions will be imposed on all parties. Even after the course is completed, sanctions may be imposed. That is, if evidence surfaces indicating academic integrity violations occurred, you may receive a failing grade on a deliverable, failing course grade, or revocation of a degree.

# Course Evaluations

UVU is dedicated to providing quality academic experiences for students. Help us identify areas where professors can improve their teaching by participating in the Student Ratings of Instructor (SRI). Your confidentiality is assured. Your feedback is critical to help us improve the teaching and learning at UVU. The online SRIs will be available toward the end of the semester.

# Course Withdraw

\_\_\_\_\_\_\_\_\_\_\_ is the last day to drop a class, receive a refund, and avoid having the class show up on your transcript. If you drop a class between \_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_, the class along with a W grade will show up on your transcript.

If you want to drop a first block class after \_\_\_\_\_\_\_\_\_\_\_, you must complete a Withdraw Exception Form. However, documented extenuating circumstances must exist in order for the department chair to consider such request. Extenuating circumstances include incapacitating illness that prevents a student from attending classes, a death in the immediate family, change in work schedule as required by the employer, or other emergencies. Withdraws are not approved due to academic difficulty. The department chair rejects about 50% of the withdraw requests due to lack of acceptable documentation, attempting to avoid a failing grade, and/or submitting the form at the end of the semester.

# Safe Zone

UVU Policy 165 defines protected classes as “race, color, religion, national origin, sex, sexual orientation, gender identity, age (40 and over), disability, veteran status, pregnancy, childbirth, or pregnancy-related conditions, genetic information, or other bases protected by applicable federal, state, or local law.” Most full-time IS&T faculty and staff have received Safe Zone training that states “regardless of gender identity, gender expression, or sexual orientation, you will be treated and respected as a human being.” Bigotry and harassment will not be tolerated by the IS&T Department.

# Academic Tutoring E&T Drop-In Tutoring Lab — CS 612

Free tutoring is offered in the drop-in tutoring lab for CS and IS&T courses. Tutors are UVU students who have already succeeded in these courses and can help you to clarify what you learned in class and implement it on your assignments. Even if you don’t anticipate having questions for tutors, it’s a great place to study and network with fellow students. Help for upper-level courses may be limited to certain hours, based on tutors’ work schedules.

Monday-Thursday: 9 AM to 8 PM

Friday: 10 AM to 4 PM

Saturday: 10 AM to 2 PM

All locations close at 4 PM on the first Friday of the month for staff training.

All locations are closed on UVU and national holidays

*Hours may vary*

# Course Outline INFO 2200 (subject to change)

|  |  |  |  |
| --- | --- | --- | --- |
| DATE | Week | TOPIC | DUE |
| **Jan 7th** | **1** | Course introduction, syllabus review |  |
| **Jan 9th** | **1** | File I/O, collection classes, looping, command line |  |
| **Jan 14th** | **2** | File I/O, collection classes, looping, command line |  |
| **Jan 16th** | **2** | XAML | ***Participation 1*** |
| **Jan 21st** | **3** | Martin Luther King Jr. Day – No Class |  |
| **Jan 23rd** | **3** | XAML, Collections, multi-form applications, classes | ***Assign1*** |
| **Jan 28th** | **4** | XAML, Collections, multi-form applications, classes |  |
| **Jan 30th** | **4** | XAML, Collections, multi-form applications, classes |  |
| **Feb 4th** | **5** | Inheritance, Polymorphism, Abstract Classes | ***Participation 2*** |
| **Feb 6th** | **5** | Inheritance, Polymorphism, Abstract Classes, Interfaces |  |
| **Feb 11th** | **6** | Inheritance, Polymorphism, Abstract Classes, Interfaces | ***Assign 2*** |
| **Feb 13th** | **6** | Abstract Classes, Interfaces, and Generics |  |
| **Feb 18th** | **7** | Washington and Lincoln Day Holiday – No Class |  |
| **Feb 20th** | **7** | Databases | ***Participation 3*** |
| **Feb 25th** | **8** | Databases | ***Assign3*** |
| **Feb 27th** | **8** | Databases | ***Participation 4*** |
| **Mar 4th** | **9** | Midterm Review | ***Assign4*** |
| **Mar 6th** | **9** | **Midterm** |  |
| **Mar 11th** | **10** | Entity Framework |  |
| **Mar 13th** | **10** | Entity Framework | ***Participation 5*** |
| **Mar 18th** | **11** | Spring Break (No class) |  |
| **Mar 20th** | **11** | Spring Break (No Class) |  |
| **Mar 25th** | **12** | Xamarin | ***Assign5*** |
| **Mar 27th** | **12** | Xamarin | ***Participation 6*** |
| **Apr 1st** | **13** | Xamarin | ***Assign6*** |
| **Apr 3th** | **13** | Home Automation |  |
| **Apr 8th** | **14** | Home Automation |  |
| **Apr 10th** | **14** | Home Automation | ***Participation 7*** |
| **Apr 15th** | **15** | XML Processing using LINQ | ***Assign7*** |
| **Apr 17th** | **15** | Web services and HTTP processing |  |
| **Apr 22nd** | **16** | Network and socket programming | ***Assign8*** |
| **Apr 24th** | **16** | **Final Exam Review** |  |
|  |  | **Final Exam** | ***Final Exam*** |