# CIT 255
# Object-Oriented Programming

## Syllabus - Fall 2023

| INSTRUCTOR: | Lisa Balbach |
|---|---|
| OFFICE: | Zoom (livestream) and JB119 (Beckett Building) |
| OFFICE HOURS: | |
| Campus: | By appointment |
| Livestream: | |

| | | |
|---|---|---|
| | Sunday | 7:00-9:00 pm |
| | Monda | 4:00-5:30 pm |
| | Tuesday | 6:00-:7:30 pm |
| E-MAIL ADDRESS: | | Lbalbach@nmc.edu |

## Course Description

The student builds on object-oriented fundamentals learned in CIT 195, focusing on implementing SOLID Principles throughout the course. Projects will explore design patterns, UI/UX considerations, multiple forms of desktop and online persistence, and the integration of various technologies to form a complete solution. Group 2 course. Critical Thinking - Direct.

Required Prerequisite(s): CIT 178 with a grade of 2.0 or higher, CIT 195 with a grade of 2.0 or higher

# Materials Needed

## 1. Textbooks

**Title: GIT Succinctly**
Author:  Hodson, Ryan
Publisher:  Syncfusion | Technology Resource Portal, Copyright 2014

Note: This text is available electronically free at the Syncfusion website. Use the following link to access it and you may be asked to create a free account.
https://www.syncfusion.com/ebooks/git

**Title: UWP Succinctly**
Author:  Pagani, Matteo
Publisher:  Syncfusion | Technology Resource Portal, Copyright 2017

Note: This text is available electronically free at the Syncfusion website. Use the following link to access it and you may be asked to create a free account.
https://www.syncfusion.com/succinctly-free-ebooks/uwp-succinctly

**Title: Database Design Succinctly**
Author:  Booth, Joseph D.
Publisher:  Syncfusion | Technology Resource Portal, Copyright 2022

Note: This text is available electronically free at the Syncfusion website. Use the following link to access it and you may be asked to create a free account.
https://www.syncfusion.com/succinctly-free-ebooks/database-design-succinctly

**Title: Blazor WebAssembly Succinctly**
Author:  Washington, Michael
Publisher:  Syncfusion | Technology Resource Portal, Copyright 2023

Note: This text is available electronically free at the Syncfusion website. Use the following link to access it and you may be asked to create a free account.
https://www.syncfusion.com/succinctly-free-ebooks/blazor-webassembly-succinctly

## 2. Software

Visual Studio 2022 Community Edition – available free for download from Microsoft, https://www.visualstudio.com/en-us/products/visual-studio-community-vs.aspx

Visio for the web (requires sign-in using your NMC account), https://visio.office.com OR Draw.io, https://www.draw.io/

## 3. Live Streaming

Zoom Client for Meeting https://zoom.us/download

## 4. Collaborative Coding

Repl.it Account https://repl.it/

## 5. Online Access

NMC E-mail http://mail.nmc.edu

LinkedIn Account, https://www.linkedin.com/

GitHub Account, https://github.com/

Screencast Account, http://www.screencast.com/ OR YouTube Account, https://www.youtube.com/ OR any video stream service

## 6. Internet Access:

If you do not have reliable Internet, you can connect from the parking lots at NMC or you can use the computer labs (if they are open). For hours and availability, please see https://www.nmc.edu/departments/help-desk/computer-labs.html

# General Education Outcomes

*The following NMC general education outcomes will be met by this course.*

***Critical Thinking:*** *Students will skillfully conceptualize, apply, analyze, synthesize, and evaluate information gathered from observation, experience, reflection, reasoning, or communication.*

# Significant Learning Outcomes

*The following learning outcomes will be met by this course.*

TABLE 1 LEARNING OUTCOMES

| Learning Outcome | Assessment Method |
|---|---|
| **Knowledge** | |
| #1  Explain the SOLID Principles of object-oriented programming. | Projects, Exams |
| **Application** | |
| #2  Demonstrate the application of the SOLID Principles object-oriented programming. #3  Choose a design pattern based the initial application requirements, maintenance, and expendability. | Projects, Exams |
| **Integration** | |
| #4  Develop a complex application. | Projects |
| #5  Deploy a complex application. | |
| **Human Dimension** | |
| #6  Demonstrate interpersonal communication skills while relating design decisions. #7  Demonstrate the ability to effectively critique their peer's work. #8  Construct a functional user interface (UI) and experience (UX). | Projects, Discussion |

| Caring – Civic Learning | |
|---|---|
| #9  Identify how the quality of code affects our interaction with technology. | Discussion |
| Learning How to Learn | |
| #10  Select professional development resources that support their learning styles. | Assignments, Discussion |
| #11  Develop a set of professional resources to maintain throughout their career. | |

## Grading and Assignment Information

Grades are assigned based on the total points you have accumulated throughout the semester.  Points are accumulated by participating in discussion exercises, completing professional development, or networking activities, attending class, completing group projects, presentations, and peer critiques, attending all team meetings and by taking the IT Specialist Software Fundamentals certification exam.   Grade proportions and points are as follows:

| Graded Activity | Total Points |
|---|---|
| Orientation, Discussion and Networking or Professional Development (8%) | 80 |
| Master Detail App (44%) | 440 |
| Training Module (14%) | 140 |
| Capstone Project (24%) | 240 |
| Software Fundamentals Certification Exam (10%) | 100 |
| **TOTAL** | **1000** |

**Grading Scale:** At the end of the semester, the following scale will be used to determine your final grade:

| Grade | Percentage | Points Required |
|---|---|---|
| 4.0 | 95-100% | 950-1000 |
| 3.5 | 90-94% | 900-949 |
| 3.0 | 85-89% | 850-899 |
| 2.5 | 80-84% | 800-849 |
| 2.0 | 75-79% | 750-799 |
| 1.5 | 70-74% | 700-749 |
| 1.0 | 65-69% | 650-699 |
| 0.0 | 0-64% | 0-649 |

I = incomplete, W = withdrawn (with or without grade (see posted date), FA = failed to attend, AU = audit or drop without record (see posted date)

## General Assignment/Project/Exam Overview

*Late work will not be accepted unless prior arrangements have been made with the instructor!*

### Reading and Training:
Each week you will be assigned different topics to learn about.  There are a variety of resources you can pick from to meet the requirement.  Reading and training activities are geared toward the projects you are working on AND the certification exam.  You will be asked questions that you will submit answers to in your developer journal.

### Discussion:
Discussion will be used for peer critiques and to share information with each other.

### Master/Detail App and Showcase
You will develop an app using accepted design patterns.  The application features persistence and displays information using the master/detail layout pattern.  Emphasis will be placed on UI/UX design.  You will work in small teams and use the Agile development process.  Work will be divided into 4 sprints.  You will

develop the design pattern, solution framework and data set as a team.  Each team member will also develop their own unique master/detail form.  Completed apps will be presented to the class by each team and classmates will complete peer critiques.

## Training Module
You will work in small teams to develop a training module for your classmates.  Each module will include a presentation, demonstration and/or lab, and an assessment tool developed by the teams.

## Capstone Project and Showcase:
You will develop applications using accepted design patterns.  The application will feature persistence and display information using the master/detail layout pattern.  Emphasis will be placed on UI/UX design.  You will work in teams using Agile development and 4 sprints.

NOTE:  This project requires inclusion of a new skill or technology of your team's choice.

## Professional Development and Networking:
Professional development activities are designed for you to build resources for continuing education and training.  Networking activities are designed for you to interact with others in the field.  You will be able to select the activities you want to complete for professional development and networking.  For activities, potential points and other requirements,
view:  https://lisabalbach.com/CIT218/Startup/PD-and-Networking-Requirements.html

## Certification Exam
The IT Specialist Software Development Fundamental exam is your final exam in this course.  It is a new exam designed to replace the MTA exam with the same name.  The objectives in the exam have been updated to reflect current practices in the developer field.  We will be addressing different topics to help you prepare for the exam throughout the semester.

# Course Communication

Announcements will be posted throughout the semester as necessary; plan to be online several times per week to check for these. Announcements should go to

your NMC e-mail, please check your NMC e-mail account frequently. It is important that you monitor your email between classes. Failure to check email will not be accepted as a reason for late or missed work.

Please use the following email address Lbalbach@nmc.edu to communicate with me outside of class.

I will try my best to answer your emails to me within a 24-hour period Monday through Friday.  I will also check email over the weekend.  I will try to read the emails at least once or twice a day and respond at that time.  If I am gone or ill, I will post that fact in the announcements so that you will know why I have not responded to your email.

The student discussion forum at the top of the course is for you to ask each other questions and to post problems you encountered and how you resolved them (your post could save others in class some time problem-solving).

## Online Communication Netiquette Policy:

Dialogue through Discussion Boards provides opportunities to communicate with each other and the instructor. Communication is expected to be positive and constructive with the intent of helping others gain further insight and clarity on assignments and concepts. Think critically as you respond to others and consider the following:

• Have others expressed the same sentiment you are thinking?

• Can you offer suggestions or provide examples illustrating points you are making?

• Use a subject line reflective of the material you are providing.

• Written responses should be concise in paragraph form with longer passages broken into additional paragraphs for ease in reading.

• Be respectful and professional. Disrespectful or sarcastic responses will be removed.

• Use emotional symbols (:-), :-(,-o, etc. to indicate the tone of voice. Use emotional symbols to convey feelings.

• Use standard writing practices including correct spelling, complete sentences with punctuation, and capitalization.

## Additional Instructional Support

1) **Instructional Materials:**  Additional free video lessons, programs, eBooks, tutorials, and documents are available on the web and will be linked into Moodle as needed.

2) **Feedback on assignments/scores:**  I will correct assignments within a week of their due date.  Scores will be posted to Moodle and comments will be entered into the comment section of the assignment dropbox.  You should receive email notification when your assignment has been corrected.  PLEASE make sure you check your score and read the comments.  If there is something you need to correct, you can fix the problem and resubmit the assignment one time for rescoring.  If you submit something for rescoring, make sure you enter "Done" in the dropbox or email me to let me know I need to rescore the assignment; otherwise, I won't know you made the correction.

3) **Posting Scores:**  Scores will be updated on a weekly basis after assignments are due.  If you have any questions about your assignment scores, please email your instructor and ask.

4) **Time Requirements:** This course is NOT a self-paced course. College courses are designed to require 2 to 3 hours of study per hour of class time. This means that a 4-unit course, in addition to 4 hours of class time, requires at least 8 hours of study outside of class. If you cannot find 8 hours of time per week to study for this course, then you should postpone until a future semester when you have adequate time to study. If you are taking more than one course, multiply your total units by 2 hours and consider whether you will have time to do that much work at a minimum in addition to class time. There is no point in setting yourself up for failure.

## Course Learning Environment

### Flipped Classroom

The course uses a flipped structure where students are introduced to content using their text and online materials including coding activities and videos. This out of class work enables classroom lecture and presentation time to be kept to a minimum, allowing for more classroom time to work on coding assignments individually and in teams.

### Video Tutorials

The course uses online videos for instruction. The videos are excellent learning tools and students should learn to use them effectively. This means more than just pushing play and passively watching – engage and code along with the video using the video controls for pacing. The only way to learn to code, IS TO CODE.

### Cooperative Learning

Application development in industry today is most often a cooperative endeavor. Success for the individual generally comes with the success of a good team. This course will have activities to reflect that reality, encourage cooperative work, and will include:

- Team Activities – Students will work in small teams to complete three projects. Teams will use online apps to communicate about the projects including Trello and Discord
- Student Forums – The course will include an open forum for students to exchange information, ask questions regarding the assignments, and to share topics of interest.
- Peer Reviews – Student work will be reviewed in small teams, providing each student an opportunity to share their work, knowledge, and receive suggestions from their peers. Team projects will be reviewed by other teams providing the same type of feedback.

## Classroom and Department Policies

**Student Preparation, Attendance, and Participation Policy:** Active participation and completion of homework is expected and will ensure the best results from this class. Students who do not submit work for 3 weeks may be administratively withdrawn from class.

**Software/Network Policy:** Students using NMC's network cannot share login information with others. Please realize, NMC resources are for your use only. Any misuse of the network or college resources may result in a denial of services. If you have any questions about the use of the network, please ask!

**Computer Lab:** NMC provides a fully equipped computer lab in the West Hall Innovation Center. There are also five computers in the Osterlin Library "business pod" that are loaded with the same software as our Beckett Building computer labs . Hours for both labs are posted at:
https://www.nmc.edu/departments/help-desk/computer-labs.html.

**Department Policy for Academic Code of Conduct:** The **policy for academic dishonesty** is as follows: The penalty for the first offense of cheating will be zero (0.0) on the assignment. Future offenses will result in failure of the course. The same will be true for the quizzes. Please think before you cheat—it is really hurting you the most. IMPORTANT: NMC requires instructors report any cheating incidents to the Vice President of Student Services. Each offense will be recorded, and multiple offenses could result in expulsion.

**Laptop Checkout at the Library:** NMC students, faculty, and staff may be able to check out laptops for home use from the NMC Library, subject to availability. Please refer to the following website for availability and checkout information: https://www.nmc.edu/library/contact-us.html

**CIT Majors:** CIT majors must have a 3.0 GPA in CIT courses as a prerequisite to taking the work experience internship. This internship class is necessary for a CIT degree. Please see the internship instructor if you are near the end of your program.

**Syllabus Changes:** The instructor reserves the right to make changes to the syllabus and will inform the class of any changes.