CIT228 Advanced Database Systems

Figure CIT228 Course Banner

Syllabus – Spring 2022

INSTRUCTOR:	**Lisa Balbach**
OFFICE:	JB119 (Beckett Building)
Livestream Office Hours:	
Sunday	7:00-10:00 pm
Monday & Wednesday.....	5:15-6:15 pm
.....	or by appointment
Campus Office Hours	
.....	by appointment
PHONE:	(231) 995-2017
E-MAIL ADDRESS:	Lbalbach@nmc.edu

Course Description:

This course builds upon database knowledge gained in CIT178 by extending into other data sources and connection technologies. Students will be able to identify and evaluate data options and access data via code. Group 2 course. Required Prerequisites: CIT 110, CIT 180 and either CIT 178 or CIT 248, all with a grade of 2.0 or higher.

Additional Required Skills: This course assumes that the student possesses the essential skills required to use a computer with the Windows operating system. The student will interact with the Windows desktop to access software and data and perform file and folder maintenance. The student must be proficient in the use of the web, e-mail, and searching. The student must have the skills required to use Moodle. To brush up on these skills, please visit the Online Learning Orientation on the Moodle menu bar.

Materials Needed:

Purchased at the bookstore

Required Book: Python Crash Course, 2nd edition©2019 by Eric Matthes, No Starch Press, San Francisco. ISBN 978-1-59327-928-8.

2. **Connection to the Internet**

3. **Required Software:**

   - **Web Editor.** We are using VS Code with extensions added for Python. The book uses Sublime which can be downloaded and used as a free trial; however, you will be expected to pay for the software once the trial has expired (VS Code you do not need to pay for!) We will cover how to set up VS Code in Lesson 1
   - **GitHub**. You will be loading your code to GitHub. We will cover how to use GitHub in Lesson 1.

NOTE: As we progress through the course, we will be adding extensions to VS Code and accessing different software applications when necessary. The software we are using is either free for students or free trial versions.

General Education at NMC promotes the acquisition of knowledge, skills, and attitudes needed to function effectively in a changing world. This fosters intellectual curiosity, essential to lifelong learning. To ensure students experience the benefits of our philosophy of general education, the faculty of NMC commits to instilling these practices throughout the curriculum.

This course will help students analyze thinking to effectively identify and resolve issues. The **general education outcome** that has been selected is:

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

Learning Outcomes

General learning outcomes for this course include:

Outcome	Assessment Method
Knowledge #1. Describe how to connect and update database files through code.	Exams, discussion exercises
Application #2. Use scripts to modify database files.	Assignments, term projects
Integration #3. Use scripting languages to code a series of complex database tasks.	Assignments, term projects
Human Dimension #4. Give and receive feedback in an appropriate manner.	Discussion exercises, term project showcase, assignments
Caring – Civic Learning #5. Describe security problems with modifying database files in server-side web programming.	Discussion exercises
Learning How to Learn #6. Engage in self-directed learning.	Discussion exercises, term projects

Grading and Assignment Information

Grades are assigned based on the total points you have accumulated throughout the semester. Points are accumulated by completing assignments, participating in discussion exercises, term projects, project showcase discussions, and exams. Grade proportions and points are as follows:

Activity	Learning Outcome	Points
11 Assignments @ 15-70 points each (41.5%)	#2, #3, #4	415
2 Tests @ 75-100 points each (17.5%)	#1	175
Projects (22%)	#2, #3, #4, #6	
Game		75
Data		70
Web		75
	TOTAL	220
Discussion, Showcase & Peer Reviews (14%)	#1, #4, #5, #6	
3 milestone showcase discussions		60
3 peer reviews		45
General discussion topics & reflective papers		35
	TOTAL	140
Professional Development/Networking (5%)	#6	50
Total Points Possible		**1000**

Grading Scale:

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 Information:

All assignments, exercises and tests in this course have due dates which are indicated in the course assignment schedule located in the lesson 1 block (the same information is also included at the top of each lesson block). **Late work will NOT be accepted unless prior arrangements are made with the instructor.**

Textbook Chapters and Lecture/Demo

You need to read the assigned pages from the textbook before class. The lecture/demo will explain the concepts in more detail and provide examples. Students who read the material first will already be familiar with information explained and will understand it better during lecture and labs.

Lab Assignments

The lecture/demo includes hands on exercises you need to complete for the lab assignment. Once you are done with all the hands-on exercises, you will be done with the lab assignment.

Weekly lab assignments are designed to practice, and fine-tune skills presented in the textbook chapter and lecture.

Weekly lab assignments are worth 15-75 points each and are due on GitHub by the date indicated in the schedule. **Late work will NOT be accepted unless prior arrangements are made with the instructor.**

Project, Project Showcase and Peer Reviews:

You will be working on three major applications that coincide with projects in the textbook. You will be creating: a game involving collisions and scoring, a data analysis application and a web application that interfaces with a database.

We will cover the sample project in the book, and you will create your own application to practice the skills you have learned. Specific requirements and the grading rubric are posted to Moodle.

As you complete the project milestones, you will share your applications with the class in a discussion forum. Requirements for the showcase are posted to Moodle. Once applications have been shared, you will review each other's applications to learn from each other and to help each other with suggestions for improvements.

Discussion Exercises:

During this course, you will be sharing information with your classmates using a discussion forum. There are problem solving exercises, research-based exercises and exercises designed for you to get to know each other better. All discussion exercises are graded, so make sure you complete them on time!

Professional Development/Social 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-NetworkingRequirements.html

Exams

The first 11 chapters in the book cover basics of the Python language. In order to complete the projects, you need to understand the language. There is an exam on the first 11 chapters once we complete them. This exam is worth 75 points and is open book/ open note. NOTE: The types of questions you will see on the exam are similar to what you will see on the IT Specialist Python Programming exam.

The second exam is the final which is the IT Specialist 303 Python exam. This exam will be given in the professional testing center at the Aero-Park campus the last week of school. Passing the certification exam is worth 100 points. Students who do not pass, will be allowed to retake the exam. Students who retake and pass the exam will be awarded 100 points. Students who do not pass the certification exam, will still receive points for the final, but their score will be prorated.

Course Communication

Announcements will be posted throughout the semester as necessary; plan to be online an average of three times per week to check for these. The instructor will also send e-mail messages, so you need to 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 during 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 Questions/Answers discussion forum at the top of the course is for you to ask each other questions. You may be able to resolve the problem without waiting for a response from me 😊.

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) **Support Materials:** Support materials include grading rubrics, completed examples, weekly lesson summaries, lecture videos, example videos and individualized help when needed.

2) **Feedback on assignments/scores:** The instructor will correct assignments within a week of receiving them. Scores will be posted to the assignment dropbox (comments will also be placed in the dropbox).

3) Posting Scores: Scores will be updated when textbook, supplemental or discussion assignments are corrected. Quiz scores should display immediately; however, short answer questions will need to be corrected manually by the instructor and won't display until after the instructor enters a score. 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.

Strategies for Success

- Do all reading and activities that were assigned before the first-class session each week.
- Practice, on the computer, the skills taught in the text or other assigned materials.
- In addition to class time, work at the college or your home on a regular and consistent schedule. Use time management skills to establish your weekly commitment to this course.
- Ask for help when you need it. Your instructor is available to help you learn. Your instructor's goal is to assist you in having a pleasant and successful learning experience.
- Take advantage of tutoring available through the college and the CIT department.
- Attend office hours. There is a strong correlation between students who attend office hours and high grades. Your instructor is also available via phone and remote meeting software.

Course Expectations 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 or downloading office software 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 Labs: There are 2 labs on-campus you can use to complete work outside of class: West Hall Innovation Center and the business POD in the Osterlin student success center. Please consult the Computer Lab website for hours: 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.

Note: 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.

Writing and Reading Center: NMC's writing center (https://www.nmc.edu/student-services/writing-center/) offers peer assistance with all types of writing at all stages of the writing process and with all forms of reading.

Laptop Checkout at the Osterlin Library: NMC students, faculty, and staff may be able to check out laptops for home use from the Mark & Helen Osterlin Library, subject to availability. Please view the website for more 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.