Read the Course Syllabus

CS 621 Introduction to Programming

Dates: Winter/Spring 2024: 1/8/24 - 5/3/24

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Format: Online Asynchronous

Ball State University Course Catalog Description

Discussion of data acquisition, transformation, manipulation and visualization and their applications on large-scale unstructured, semi-structured and structured data. Implementation of data analytics methods, algorithms, software, and systems. Use of large-scale data processing systems. Comparison of the current and future trends for big data analytics.

Prerequisite

CS 617 or CS 601

Learning Outcomes

After taken this class, the student will be able to

- Identify data sources and opportunities.
- Acquire, transform, and manipulate data using languages like Python.
- Retrieve and process unstructured, semi-structured, and structured data.
- Perform data analytics tasks in various domains.
- Create and evaluate data visualizations.
- Perform text analytics and visualization.
- Develop a standard pipeline for data analytics.

Course Modality and Structure

This course is offered in an online, asynchronous format through Coursera. Course content and assignments are arranged in weekly modules. Each module is composed from the following items: recorded lectures and coding examples and practices, reading assignments, homework assignments, and scheduled exams. Students can work through each module's material at their own pace.

Course Time Commitment

At Ball State University, it is expected that students will spend approximately 2 hours of study time for every one credit hour of class. Since this is a 3 credit hour class, you should expect to spend up to 9 hours on this class each week: approximately 3 hours of "in class" work (watching lectures and coding examples, studying coding samples, and exams when scheduled) plus up to 6 hours per week of study time (reading assignments, completing homework assignments, practicing coding samples, and related work).

Course Materials

All course materials will be available on Coursera platform.

Computer Requirements

A computer is required for this class, either Windows or Mac. Any modern computer should work, as all programming can be done using a browser on the Coursera platform. Program execution will occur on the Coursera servers, so all your computer needs to do is to connect through the browser. Alternately, you can choose to install the software packages directly on your computer following instructions found in the textbook (in this case, there may be minimum processor speed and memory requirements), but all assignments still need to be submitted through the Coursera interface.

Course Assignments

Grading Summary

Assignment Type	Percent of Final Grade
Homework Assignments	60%
Final Project	10%
Exam 1 & Exam 2	30%

Grading Scale

A standard grading scale will be used:

100-93% **A** 92-90% **A-** 89-87% **B+.** 86-83% **B** 82-80% **B-**

79-77% **C+** 76-73% **C** 72-70% **C**- 69-67% **D+** 66-60% **D** 59-0% **F**

Description of Assignments

Weekly Homework Assignments

The contents covered each week will be reflected in each week's assignment. This will help the students confirm their understanding of the course materials. Most assignments will need programming effort to complete the requirements.

Final Project

During the final week, the students will need to complete a final project to reassure their understanding of delivering a data science product with real data in mind

Exams

Two exams will be given during the semester. These exams will be completed online using Coursera. The exams will be released with the weekly module, and learners will have a time limit to answer the questions once the exam is started.

Exam	Due Date
Exam 1	Week 5

Exam	Due Date
Exam 2	Week 10

Course Policies and Advice

Participation Policy

- The best way to learn the course material is to study and practice the materials covered in each week.
- Be sure to log into Coursera frequently. Each module is expected to be completed in one week. Continuous participation throughout the week is much better for learning than trying to "cram" the whole week's assignments in one sitting. Please try to spread out your work over a few days, to give your brain time to digest what it has learned.

University Policies

Diversity Statement

Ball State University aspires to be a university that attracts and retains a diverse faculty, staff and student body. We are committed to ensuring that all members of the campus community are welcome through our practice of valuing the various experiences and world views of those we serve. We promote a culture of respect and civil discourse as evident in our Beneficence Pledge. For Bias Incident Response information, visit the Bias Incident Reporting website or email mc2@bsu.edu.

Disability Services

If you need course adaptations or accommodations because of a disability, please contact Disability Services as soon as possible. The Office of Disability Services coordinates services for students with disabilities; documentation of a disability needs to be on file in that office before any accommodations can be provided. Disability Services can be contacted at 765-285-5293 or dsd@bsu.edu.

Attendance Policies

Faculty are required to establish attendance policies for their courses and ensure that they communicate these policies through their course syllabi. In some cases, faculty may be asked

to provide the last date of attendance for a student in association with financial aid requirement.

Students are expected to review course syllabi regarding absence guidelines and follow those guidelines. Course attendance policies must be consistent with University policy. The University has a number of specific policies regarding student absences that are housed within different areas. Explore Ball State course attendance policies. For CS 617, attendance is defined as regularly participating in the weekly module activities.

Ball State Academic Ethics Policy

Honesty, trust, and personal responsibility are fundamental attributes of the university community. Academic dishonesty and other forms of academic misconduct threaten the foundation of an institution dedicated to the pursuit of knowledge and will not be tolerated. To maintain its credibility and reputation, and to equitably assign evaluations of scholastic and creative performance, Ball State University is committed to maintaining a climate that upholds and values the highest standards of academic integrity. Visit the complete Student Academic Ethics Policy.

Course Academic Ethics and Plagiarism Policy

When completing assignments for this class, the intent is that you are learning how to program, and need to practice in order to improve. All resources that you need to complete the solutions are covered in the course, and assignments are scaffolded to help you build your understanding. When you use online solutions, AI assistants, or others to complete your work for you, you are doing yourself a disservice and not really learning the material. Using these resources is considered academic dishonesty and plagiarism. **For this course, the use of online solutions and AI assistants such as ChatGPT are prohibited**. Use of such resources violates the course Academic Ethics policy and may result in failing the course.

You are probably familiar with how plagiarism applies to written work, such as essays. For a programming class, plagiarism is similar – your "essay" is your code. There are many different ways to successfully solve each programming problem, and so code that is independently written is usually different than other work submitted by your classmates. You *can* discuss with each other in general terms how to approach solving a problem, but should never share specific code, either verbally or in written form. Unless otherwise indicated for all assignments, you must work independently by yourself. Never email or directly share your code with other students, post it online, or otherwise disseminate solutions to assignments.

Potential Violations

Examples of academic integrity violations include but are not limited to:

- Working with another person on any assignment.
- Sharing or allowing others to access your files, whether done with permission or not.
- Use or possession of a file created by someone else.
- Reusing work from another semester, course, or section.
- Soliciting others to complete work for you, both human and AI assistants such as ChatGPT.

Subject to Change Statement

This syllabus and schedule are subject to change in the event of extenuating circumstances.