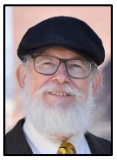
CS 120.5: Computer Science 1: Programming Fundamentals

CRN: 27647

Department of Computer Science
College of Sciences and Humanities
Ball State University, Muncie, IN

Course Syllabus

Instructor	**Mr. David L. Largent**		**Semester**	**Fall 2025**
Phone	765-285-8641			
E-Mail	dllargent@bsu.edu		**Class meeting days**	Mon., Wed., Fri.
			Class meeting time	11:00-11:50 AM
Learner help hours	Posted in Canvas (or by appointment, or take your chance and drop by)		**Lab meeting day**	Tuesday
			Lab meeting time	11:00 AM-12:15 PM

Contents

I. University Course Catalog Data

Description Introduction to fundamental programming techniques. Different sections of this class may explore different programming contexts such as media computing or data science applications. Topics include control structures, built-in data structures, simple sorting and searching, and procedural abstraction. Hands-on lab exercises and programming assignments illustrate these topics and build problem-solving abilities. Students are expected to have basic knowledge of algebraic notation as expressed in high school mathematics.

Credits Upon successful completion of this course, you will earn 4 credit hours.

Modality In-person, four times per week.

Prerequisite Learners are expected to have basic knowledge of algebraic notation as expressed in high school mathematics.

II. Course Student Learning Objectives

After successfully completing this course, you should be able to:

- Identify, compare, evaluate, and write programs that use the sequencing, iteration, and selection constructs in a high-level programming language.
- Evaluate expressions and explain the effect of statements in a high-level programming language.
- Identify, compare, evaluate, and use the formal elements of procedural abstraction including parameters, local variables, and return values.
- Write programs that use a one-dimensional data structure to represent aggregate data and perform computations with those data.
- Explain how information can be encoded as data and problems can be solved by processing those data.

III. Support for being a learner

Students can benefit from free tutoring and coaching at the Learning Center, writing practice and feedback at the Writing Center, and public speaking assistance at the Speaking Center.

FERPA and Privacy As a student, your educational records are considered confidential. Under FERPA (Family Educational Rights and Privacy Act), your records are confidential and protected. Under most circumstances, your records will not be released without your written and signed consent. However, some directory information may be released to third parties without your prior consent unless a written request to restrict this is on file. You can learn more about student rights to privacy by reading **Ball State's FERPA and Privacy and Protection.**

IV. Support for being a human

Students can benefit from mental health assistance at the Counseling Center, and assistance with basic needs at the Basic Needs Hub.

University statement We are committed to ensuring that all members of the community are welcome, through valuing the various experiences and worldviews represented at Ball State and among those we serve. We promote a culture of respect and civil discourse.

Disability statement If you need course adaptations or accommodations due to a disability, please contact me as soon as possible. Ball State's Disability Services Office coordinates services for students with disabilities. You'll need to have documentation on file with them before any accommodations can be provided. You can contact them at 765-285-5293 or dsd@bsu.edu.

Freedom of Expression In this course, we are committed to fostering a learning environment that values intellectual diversity, encourages free expression, and promotes open inquiry. As members of the Ball State Community, we treat each person in the Ball State community with civility, courtesy, compassion, and dignity and respect and learn from differences in people, ideas, and opinions. Please review Ball State University's Statement on Freedom of Expression, the resources on Ball State's Freedom of Expression webpage, and Ball State's Beneficence Pledge.

Title IX Ball State University is committed to providing a safe and inclusive learning environment for all students. If you or someone you know has experienced sexual harassment—including sexual assault, dating violence, domestic violence, or stalking, please know that you are not alone. The University offers support services and resources. For more information or to report an incident, please visit bsu.edu/titleix or contact the Title IX Coordinator at 765-285-1545 or at titleix@bsu.edu.

As your instructor, I am a mandatory reporter under the Title IX policy and required to report any information I receive about possible sexual harassment. This includes information shared in class discussions, assignments, or private conversations.

What happens after I report? The Title IX Coordinator will email the person who experienced sexual harassment (complainant) and invite them to schedule a meeting. If the complainant **chooses** to meet with the Title IX Coordinator,

- Title IX Coordinator will offer supportive measures (e.g., counseling, extensions on deadlines, course-related adjustments, changes to work or class schedules, and/or referrals to campus offices), review the policy, and discuss options to move forward.
- If a complaint is filed by the complainant or the University, an investigation will begin following University policy.

V. Course Policies: Grades

Late work Completing and submitting your work on time will facilitate your learning in this course. Many assignments are based on your understanding of previous assignments. If you get behind on assignments, this will have a negative impact on your understanding of later assignments. I expect you to submit your work by the due date and time I set. By doing so, you stay current, and it is more efficient for me to evaluate your assignment at the same time as I review other learners'. ***However, all assignments may be submitted after the due date, with no penalty*** *(except for serving as an Expert of the day, and taking quizzes and exams)*. Simply submit it; no explanation is needed. (You need to make special arrangements with me to make up serving as an Expert of the day, or taking a missed Quiz or Exam, and should be done within three days of the due date.) The only absolute due date is the end of finals week for this semester, after which no work may be submitted.

University Grade Appeal Policy If you believe you received a final course grade that does not reflect your performance due to fairness or a procedural issue, you have the right to file an appeal within 5 school days after final grades are posted by the Office of the Registrar. Review the University Grade Appeal Policy and Process.

VI. Course Policies: Technology

E-mail So that I can verify your identity, you must send e-mail to me from your BSU account, or through Canvas. I may ignore e-mail sent from other accounts. Monitor your BSU Canvas and e-mail accounts on a regular basis, *at least daily*. Your lack of seeing an announcement or e-mail does not constitute an excuse for making up, or turning in, late work. You can expect an e-mail response from me within 12 to 18 hours, usually much quicker. However, I only commit to monitor my BSU e-mail account actively Monday through Friday from 8:00 AM to 5:00 PM. Although you may find that I read and reply to e-mail at many other times and days, do not *depend* on me doing so.

VII. Course Policies: Learner and instructor expectations

Attendance policy I am required to establish an attendance policy for my courses and communicate it in this document. In some cases, I may be asked to provide the last date of attendance for a learner in association with financial aid requirements. Learners are expected to review this policy regarding absence guidelines and follow these guidelines. Course attendance policies must be consistent with University policy. The University has several specific policies regarding student absences that are housed within different areas. Explore Ball State course attendance policies.

Regular and consistent attendance is necessary for you to do well in this course because absence results in the loss of classroom interaction for you, your peers, and me. Much of what you will learn will come from experiences we have in class, and the learning will require your participation. My experience shows that learners do better in this course if they attend class regularly, even if they think they already know the material. Ball State University expects students to attend and participate in the courses for which they are registered. Attendance will be taken during each class session. As defined in the final course grade table provided in the "Learner effort and basis for final grade" section of this document, your attendance may impact your final course grade.

Engagement Expectations To support a respectful and engaging academic community that encourages the free exchange of ideas and civil discourse, we will follow these ground rules:

- **Respect different perspectives.** Share your ideas and let others share theirs.
- **Challenge ideas, not people.** Disagree respectfully. No personal attacks or put-downs. Focus on exploring ideas critically and constructively.
- **Listen to understand.** Stay curious, ask questions to understand, and give others space to speak.
- **Assume good intentions.** Approach discussions with curiosity and compassion.
- **Keep it private.** What is shared in class stays in class. Do not share others' words or work without permission.
- **Be respectful.** Avoid hurtful language, stereotypes, or content that may demean others. Keep feedback constructive.

Online etiquette Professional behavior is required online as well. The first rule of netiquette is to "remember the human" when you are communicating with me or with your peers. The second rule is to "adhere to the same standards of behavior online that you follow in real life." It is not likely

that you would yell at, mock, or belittle another learner in a face-to-face class so do not do it online. The feeling of anonymity that some people have when they are online can lead to those sorts of behaviors, but they are **not acceptable** here or in any other class.

Student 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 VPAA's academic integrity website (Students tab) for resources on understanding academic integrity, citing sources properly, and avoiding inadvertent academic dishonesty. To learn about BSU's academic integrity expectations and students' rights, please read the University Student Academic Ethics Policy.

Academic integrity violations include giving or receiving an unfair academic advantage (cheating), presenting someone else's ideas or work as your own (plagiarism), and falsifying academic records. Unless otherwise indicated, you must work independently by yourself. Check with me if you are unsure whether something constitutes academic dishonesty. Examples of academic integrity violations include but are not limited to:

- Using resources not authorized by the faculty member (including devices, AI tools, hidden notes, and open books)
- Using commercial study websites to find answers to graded assignments (Chegg, Course Hero, StudyPool, OneClass, etc.).
- Without the instructor's written permission, giving away, buying, or selling graded assignments class notes, exams, study guides, or other course materials to other students or to third-party vendors (Course Hero, Chegg, 24HourAnswers, etc.).
- Working with another person on any assignment other than authorized group projects.
- Sharing or allowing others to access your files, whether done with permission or not.
- Reusing your own work from another semester, course, or section.
- Sharing answers with others during exams (passing notes, texting, whispering, gesturing)
- Discussing exam questions and answers with students who have not taken the exam.
- Soliciting others to complete work for you.

Generative AI Statement All work conducted and/or submitted in this course must be your own, completed in accordance with the Ball State University's Student Academic Ethics Policy. You may not collaborate with or make use of ChatGPT, Gemini, or any other generative AI applications at any time to develop materials submitted for this course.

Plagiarism I have read, and firmly believe, "the one who does the work does the learning."[1] Therefore, to facilitate your learning and to protect the integrity of learning in this course, I have established the following policy:

Plagiarism is not acceptable. You are probably familiar with how plagiarism applies to written work, such as essays. For a programming course, plagiarism is similar—your "essay" is your code. There are many ways to successfully solve each programming problem, so code that you independently write is usually different from work submitted by your classmates. You may discuss with each other, in general terms, how to approach solving a problem, but you should

[1] Terry Doyle (2011) *Learner-Centered Teaching.* Routledge. 222 pages. ISBN-13: 978-1579227432.

never share specific programming code, either verbally or in written or electronic form. Never email or directly share your code with other learners, post it online, or otherwise disseminate solutions to assignments, and do not copy from another learner or website. **Using generative AI tools to complete an assignment is a violation of Ball State's Academic Ethics Policy** unless I explicitly approve the use of AI. In general, you may not submit any work generated by an AI program as your own, as doing so would be plagiarism. **Unless I explicitly designate an assignment as a group assignment, work must be yours alone.** Voting with another learner's Poll Everywhere account is cheating. Similarly, if you have votes for a class session you did not attend, I will consider you to have cheated.

If you violate the Academic Ethics Policy I will lower your final grade, possibly to an F, and will report the incident to the appropriate university administrators. You should be aware of the fundamentals of copyright law and the university's intellectual property policies for student-created work.

VIII. Course format

I create a learning environment for this class using a combination of peer instruction, pair programming, out-of-class videos, in-class programming activities, occasional brief lectures, and media computation. Note that the textbook, videos, and other learning resources directly support media computation; the others are pedagogic practices that work within this context.

Preparation expected **I expect you to come to class prepared**, which includes having read the assigned material, and watched videos I provided. During class, I may quiz you over the material, have you enter into short discussions about the material with other learners, and have you work in pairs or small groups on programming activities related to the material. This course format is often called **flipped learning**, since the usual lecturing is provided primarily by videos you will watch outside of class, and you will complete most of your homework while you are in class.

The course incorporates a required laboratory component that involves significant hands-on programming activities and projects. The in-class activities and out-of-class projects will serve to bridge the gap between theory and practice. The projects will count for a significant part of the final grade.

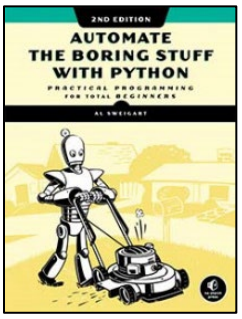
IX. Course schedule

Each week we will explore new ideas and topics while you discuss them with other learners, and complete in-class programming activities. Periodically, you will individually develop programming projects to provide evidence of your learning. I have posted a day-by-day course schedule as a separate document in Canvas. To support a learning experience that is responsive to the needs, interests, and pace of our course community, the course schedule may shift over the semester. The most current version of the schedule will always be available on Canvas.

X. Required texts and materials

For more information about obtaining required course materials, see Ball State First Day.

NOTE: *The full text of this book is provided online by the book author at no cost to you, and I will provide easy access to the online book in Canvas. You are not required to buy the physical book; you are required to read the material in the book, however. If you are more comfortable reading a physical book, then you should probably buy it.*



Title: **Automate the Boring Stuff with Python**
Author: Al Sweigart
ISBN-10: 1-59327-992-2
ISBN-13: 978-1-59327-992-9
Publisher: No Starch Press
Edition: 2
Copyright: 2020
Format: Paper; 547 pages

For your convenience, you should install specific free software (described in Canvas) on your computer, if you have one. If you do not have a computer, you will need to utilize a computer in the library that has the needed software installed.

Technology requirements for this course are listed in Canvas, including computer, internet, software, and accounts.

XI. Classroom response system

We will be using a classroom response system called Poll Everywhere to make our class time more engaging. This will help me understand what you know, give everyone a chance to participate, and increase how much you learn in class. This will also provide you with feedback on how well you are comprehending course concepts, help you master challenging concepts, and allow you to review material after class. *Our campus has licensed Poll Everywhere, so it is free for learners to use!* ***You do not need to buy anything, but you do need access to your Poll Everywhere account.***

You are required to participate using Poll Everywhere on a smartphone, tablet, or laptop computer. It is your responsibility to follow the steps detailed in Canvas to properly set up and use your Poll Everywhere account in a timely fashion.

XII. Learner effort and basis for final grade

How can you best succeed in this course?

To succeed in this course, you should…

- Put forth honest effort, think, and reflect
- Attend classes and participate in them consistently

- Adequately prepare before attending class
- Read regularly and on time
- Seek and utilize provided resources
- Work collaboratively with classmates
- Complete assignments, quizzes, and exams, and submit them in as they are due
- Show respect to both me and your peers

How assessment (i.e., grading) will work I expect that you are participating in this course out of a desire to grow and learn as a human being, and that your standards for personal success are high. Accordingly, I have set high standards for success in this course. I take what we do here seriously, and I expect you to do so as well and meet those standards. **Assessment in this course is probably unlike anything you have experienced before. Please read this carefully so you understand how I will assess your work.**

Research reveals that adults learn most effectively when expectations are both clear and challenging. In this course, **I use a methodology called *specifications grading* in which your final course grade directly reflects your level of achievements in satisfying learning objectives**. Each assignment comes with a specific set of requirements (also called "specifications" or "specs"), and **I will only consider submissions that meet all the requirements to be complete**. That is, I will mark any assignment as incomplete that does not meet the specifications, and you will earn no credit for it. Prior research shows that this approach is both more accurate and more transparent than traditional points-based grading.

I will evaluate all your work for the course (except the projects and exams) on a complete/incomplete model with the standard for passing set at a high B level. I will provide detailed and precise specifications to you for each assignment. This applies to everything we do except for your final course grade, which must be on an A-F scale (see below). I want you to take the course and your work in it very seriously. The goal is to give you freedom to experiment, be creative, and learn, without having to worry about what I want from you for you to earn the grade you want.

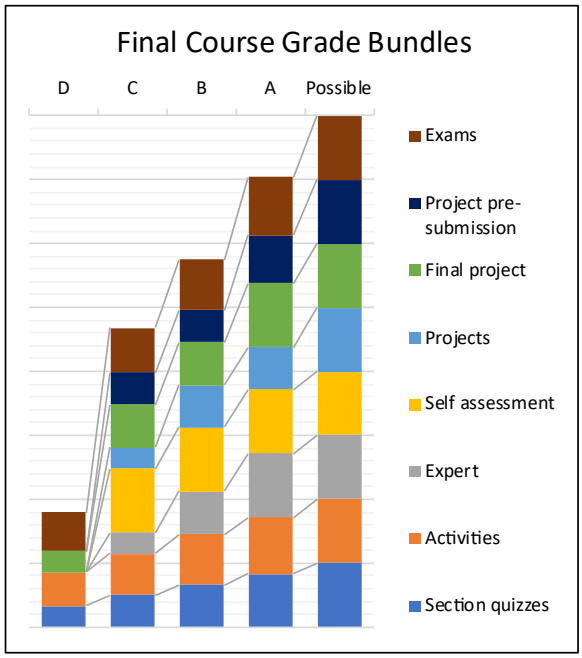
This approach to grading is promoted by Dr. Linda Nilson as described in her 2014 book *Specifications Grading*[2]. The essence of the logic behind it is this:

- With a very detailed and clear specification of what the instructor wants, the learner does not need to guess. This makes the evaluation process very transparent, usually to the point where the learner can accurately forecast their own grade.
- With flexible deadlines and the ability to resubmit multiple times, learners are provided with incentives to try to understand the material rather than beat the deadline. It removes the pressure of trying to get 100% on everything because the average of your grades will not determine your final course grade.
- It reduces grading time for the instructor because the instructor does not need to justify the difference between a 75 and an 80 (which likely takes more time than learners think). The instructor just needs to determine if the assignment is complete enough to be satisfactory or not. If it is not Satisfactory, the learner gets to resubmit, addressing the

[2] Linda B. Nilson (2014) *Specifications Grading: Restoring Rigor, Motivating Students, and Saving Faculty Time.* Stylus Publishing; Reprint edition (October 22, 2014). 184 pages. ISBN-13: 978-1620362426, ISBN-10: 1620362422.

feedback of what is needed to improve the assignment. With the "extra" time, the instructor can provide better feedback to the learner.

Final course grade Although I will evaluate each assignment as complete/incomplete, your final course grade will be on the A-F scale, as per university policy. I will assign a variety of assessment items, listed in the table below, throughout the semester. The chart to the right broadly illustrates the "bundles" for each course grade level; the higher the grade, the more you need to complete in each assessment category.



I will provide a detailed explanation (with an evaluation rubric) when I make an assignment, however a brief description of each assessment category follows the table below. I have provided the approximate amount of time (including class time and based on earning an A) you can expect to spend doing each during the semester. I have provided a day-by-day course schedule in a separate document, which is posted in Canvas.

Each final course grade (A, B, C, D, F) will have a defined set of items you must complete in the assessment categories described below. Your final course grade will be the highest grade for which you have met (or exceeded) all specifications defined for it in each assessment category. **To earn a given course grade, you must satisfy all specifications in that grade's column.** For example, to earn an A you must meet (or exceed) the specifications for all assessment categories at the A level. If you have one or more categories where you have only met the B level, then you will earn a B.

Your final course grade will be determined based on your ability to meet the specifications as broadly defined in the following table and described above. The specific number of assignments and specification requirements are posted in Canvas, to allow flexibility in the learning environment to adapt to student needs during the semester.

	Hours of effort	Course Grade Earned				
Assessment category		**A**	**B**	**C**	**D**	**F**
Section reading & videos & quizzes	42 (reading/ videos)	Meet A level specs	Meet B level specs	Meet C level specs	Meet D level specs	If you do not meet the specs for A, B, C, or D, you will
Classroom activities/ homework	30	Meet A level specs	Meet B level specs	Meet C level specs	Meet D level specs	
Expert of the Day	5	Meet A level specs	Meet B level specs	Meet C level specs	Meet D level specs	
Mid-semester self-assessment report	1	Meet A level specs	Meet B level specs	Meet C level specs	Meet D level specs	

Assessment category	Hours of effort	Course Grade Earned				
		A	B	C	D	F
Projects	12	Meet A level specs	Meet B level specs	Meet C level specs	Meet D level specs	earn an F.
Final project	20	Meet A level specs	Meet B level specs	Meet C level specs	Meet D level specs	
Project pre-submission commitment	1	Meet A level specs	Meet B level specs	Meet C level specs	Meet D level specs	
Exams total accumulated percent	9	Meet A level specs	Meet B level specs	Meet C level specs	Meet D level specs	

I may award plus or minus grades in a situation where all your assessment categories are at a higher grade, except for one or two categories. When determining plus or minus grade adjustments, more weight will be given to the projects and exams assessment categories and will be limited by your classroom engagement assessment category. If you do not meet the minimum classroom engagement threshold listed in the following table, you will not be eligible for the grade adjustment shown. Note, however, that meeting the threshold does not automatically result in you earning a higher adjusted course grade; you must meet the other criteria described below to do so.

Assessment category	Hours of effort	To be eligible for a plus/minus grade adjustment to				
		A- or B+ from B	B- or C+ from C	C- or D+ from D	D- from F	F
Classroom engagement	60	Meet B level specs	Meet C level specs	Meet D level specs	Meet F level specs	N/A

Assessment categories I brie briefly describe each assessment category below. *Assignment details, including instructions, relevant readings, due dates, and evaluation criteria/rubrics will be posted and updated in Canvas. Please check Canvas regularly to stay informed and on track.*

Classroom engagement: Be present, participate, and make sure you sign the attendance sheet each class day -OR- respond with Poll Everywhere, when asked. By being actively engaged, you will have the opportunity to interact with, and learn from your peers.

Quiz: Will consist of a few multiple choice and true/false questions which you will answer using Poll Everywhere. I will administer a quiz on the day we start each section. This is to encourage you to prepare before coming to class so that you will be able to participate. You must respond correctly to at least 50% of the questions to pass that quiz.

Classroom activity: Short program you will develop with a partner during class. Often, you will be able to complete these before the class is over, but it is your responsibility to complete them after class, if not. You are responsible for submitting the completed activity in Canvas. These activities are designed to help you learn programming concepts and problem-solving skills.

Expert of the Day: When you are an assigned expert, you will complete the activity prior to your scheduled day. During class, you will respond to learner questions that arise. By doing so, you will better learn that programming skill.

Mid-semester self-assessment report: A structured reflection report in which you will evaluate how you are doing in the course and reflect on what you need to do during the remainder of the semester to earn the grade you want.

Projects: A program considerably more complex than a classroom activity that you will develop independently, outside of class. Each project will be evaluated for accuracy, style, and completeness. I believe a finer granularity is appropriate when evaluating large assignments. As such, I will evaluate your submission based on specifications in tiers, rather than using a complete/incomplete model. The assessment tiers are listed here, with a brief description of each.

- Master: Your submission met or exceeded all specifications
- Proficient: Your submission met most specifications, but there is room for improvement
- Starter: Your submission met a few specifications, but can be greatly improved
- Un-assessable: Your submission demonstrated little understanding of the material

The projects are designed to help evaluate what you have learned up to that point in the semester. You will also reflect on your experience writing each program.

Final project: A program considerably more complex and larger than a classroom activity, or project that you will develop independently, outside of class. It will be evaluated on accuracy, style, and completeness. Like the other projects, I will evaluate your submission based on specifications in tiers, using the assessment tiers listed for the other projects. This project provides you with an opportunity to demonstrate everything you have learned. You will also reflect on your experience writing the program.

Project pre-submission commitment: When you are assigned a project, you will review your Project Reflection Paper from the previous project and briefly describe what you are going to do the same and different to complete the project just assigned.

Exams: Will consist of a variety of question types designed to assess what you have learned. I will administer the exams in our classroom.

XIII. Subject to change

I reserve the right to make reasonable changes to any part of this document in extenuating circumstances. Should a change become necessary, I will provide you with as much notice as is reasonable by making announcements in class, Canvas, and/or via e-mail.

Last updated on 08/09/2025.