



CS 150 – Computer Programming for the Liberal Arts

Course Basics



MWF 10:00Am – 10:50AM
Pasteur 002

Instructor:

Dr. Robert Kelley



P006B (M/W 1:00 – 3:00)



X7548



rkelly@bellarmine.edu

Email is the best way to contact me. I check mail every afternoon and will respond within 48 hours. I will also monitor the MS Teams channel for this course a few times a day except weekends.

Textbook & Course Materials

- Intro to Python for Computer Science and Data Science (ISBN: 9780135404812)
- Anaconda Python (latest version)
- GitHub Account (<https://github.com>)
- Desktop or laptop computer manufactured in last five years (no Chromebooks)
- Audio/visual recording device (webcam/smartphone)
- Reliable high-speed Internet access.
- Modern web browser
- Office 365
- PDF Reader

Welcome to Computer Programming for the Liberal Arts! In this course, you will learn about how write computer programs in the Python programming language using Jupyter Notebooks. You will see Python programming examples from a wide variety of liberal arts disciplines that will demonstrate the various capabilities of the Python language. The skills you acquire in the course will be useful in a many different jobs and industries.

You will build your knowledge of Python programming through several programming projects designed to focus your attention on specific programming constructs, as well as a midterm and a final exam designed to measure your acquisition of the conceptual material in this course.

Course Description (from BU Catalog)

Introduction to computer programming for students interested in learning the practical aspects of programming for solving problems in a wide variety of disciplines outside of computer science and engineering. The course covers basic programming constructs including statements, expressions, variables, conditionals, iteration, functions, and simple data visualization and data manipulation techniques using various Python libraries. *This course will not count for credit in either the Computer Science or Computer Engineering programs.* **3 credit hours.**

Prerequisites: None

Learning Outcomes

This course meets **CS Program Learning Outcomes:**

| Learning Outcome | How this outcome will be demonstrated |
|-------------------------------------------------------------------------|----------------------------------------------------------|
| The ability to develop computer programs to solve problems | <i>Programming Assignments, midterm exam, final exam</i> |
| Competence in the design and development of software engineering tools. | <i>Programming Assignments, midterm exam, final exam</i> |

In addition to this the CS Program Learning Outcomes, by the end of this course, students will be able to:

Technology Support

The Technology Support Center (TSC) provides technology services for the Bellarmine community for Moodle, Office 365, email, and other technology needs. The TSC is open Monday through Saturday. You may stop by the TSC on the "A" Level of the Library, call 502.272.8301, or email tsc@bellarmine.edu.

Library Access

To access the W.L. Lyons Brown Library and pertinent contact information, visit the library website at <https://www.bellarmine.edu/library>. Through the library, Bellarmine students have access to resources for research, including academic journals, print and eBooks, films, and more. Some of these services require special steps in order to access off-campus; you can find necessary instructions at http://libguides.bellarmine.edu/off_campus.

Course Methodology

This course will be conducted using an **active-learning approach**. Some class sessions will involve lecture others will involve hands-on activities. As it is not possible to cover every detail of every topic thoroughly in class, you are expected to read the chapters from the text on your own.

Grading Scale

| Numerical Grade | Letter Grade |
|-----------------|--------------|
| 97 to 100 | A+ |
| 93 to < 97 | A- |
| 90 to < 93 | A |
| 87 to < 90 | B+ |
| 83 to < 87 | B |
| 80 to < 83 | B- |
| 77 to < 80 | C+ |
| 73 to < 77 | C |
| 70 to < 73 | C- |
| 67 to < 70 | D+ |
| 60 to < 67 | D |
| <60 | F |

- Choose the correct programming structures to use for various problems and data structures
- Use Jupyter Notebooks to write interactive Python programs
- Use various Python libraries to extend the functionality of your Python programs.
- Maintain a code repository for sharing code

Grading and Assessment

Your knowledge acquisition in this course will be measured by the following:

1. **Programming Assignments:** You will complete several small and large Python programming assignments designed to assess your ability to implement the concepts covered in this course. The assignments should be completed individually unless specifically stated. The due dates for the larger assignments are on the Course Schedule. Smaller, ad hoc assignments will be posted/assigned as the course progresses.
2. **Midterm Exam:** You will complete an online midterm exam that will assess your understanding of the conceptual material cover in the course up to that point.
3. **Final Exam:** You will complete an online cumulative final exam that will assess your understanding of all of the conceptual material covered in this class. We will discuss details and format of the final exam toward the end of the term.

Breakdown of Final Grade

The following shows how your final grade will be weighted.

| | |
|-------------------------|-----|
| Programming Assignments | 80% |
| Midterm Exam | 10% |
| Final Exam | 10% |

Succeeding this Course

Active participation will be the best way for **you to learn and understand the material**. My perspective is that **YOU** are responsible for learning; I am here to structure, guide and facilitate – I cannot “make” you learn. I assume you will spend time outside of class preparing for participation. The more you put into the course, the more you will get out of it. Another important factor for success is asking for help. I have published office hours – use them. I can schedule appointments at other

Cell Phone/Social Media Policy

Like everyone else, I love staying connected to my friends and family. However, there are situations in which it is not appropriate and/or efficient to use a cell phone or computer to access texts or social media. While in class or labs, put your phone on vibrate. If you receive an emergency call, go out in the hall to answer it. Otherwise, keep your cell phone put away and stay off social media on the lab computers. *If I notice that you are violating this policy, I will ask you to leave.*

Accommodation Policy

If you have an official accommodation letter from disability services, you must make an appointment with me within one week of receiving that letter to discuss accommodations. This is extremely important. I cannot appropriately support your disability without a face-to-face discussion. Depending on the nature and number of accommodations, I may further require that you attend office hours every week to ensure you stay on track.

Attendance Policy

Excessive absences will make it difficult for you to succeed in this course. I expect attendance for **all class and lab sessions**. If you miss more than three or four sessions over the semester, you will struggle to keep up with the content and pace of the course. In addition, **I do not tolerate excessive tardiness!** We are all late occasionally - it happens. However, if you are consistently late to class or labs, I will not allow you to make up any graded work that was administered that day and I may prevent you from attending a session altogether. *In short – be here, on time and ready to go. Email me in advance to let me know if you must miss class or as soon as possible after class to let me know why you missed.*

times with appropriate notice. If meeting in person is not possible, e-mail me or contact me over the MS Teams channel. I cannot help you if I do not know you are struggling.

Course Schedule

| Week | Topic(s) |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8/21 | Course Introduction <i>Reading: Deitel, Chapter 1/2</i> |
| 8/24 – 8/28 | Introduction to Anaconda Python (Jupyter Notebooks and Spyder) Introduction to GitHub |
| 8/31 – 9/4 | Control Statements and Program Development <i>Reading: Deitel, Chapter 3</i> |
| 9/7 – 9/11 | Chapter 3 cont. |
| 9/14 – 9/18 | Functions <i>Reading: Deitel, Chapter 4</i> |
| 9/21 – 9/25 | Programming Project 1 due (M) Sequence: Lists and Tuples <i>Reading: Deitel, Chapter 5</i> |
| 9/28 – 10/2 | Chapter 5 cont. |
| 10/5 – 10/9 | Dictionaries and Sets <i>Reading: Deitel, Chapter 6</i> Midterm Exam (online) |
| 10/12 – 10/16 | Chapter 6 cont. |
| 10/19 – 10/23 | Array-Oriented Programming with NumPy <i>Reading: Deitel, Chapter 7</i> |
| 10/26 – 10/30 | Programming Project 2 due (M) Strings: A Deeper Look <i>Reading: Deitel, Chapter 8</i> |
| 11/2 – 11/6 | Files and Exceptions <i>Reading: Deitel, Chapter 9</i> |
| 11/9 – 11/13 | Chapter 9 cont. |
| 11/16 – 11/20 | Object-Oriented Programming <i>Reading: Deitel, Chapter 10</i> Programming Project 3 due (M) Friday – Picture Day/Last day of class |
| 11/23 – 11/27 | No Class – Thanksgiving Break |
| 11/30 -12/2 | Study Days |
| Final Exam | Wednesday, December 9th 8:00AM to 11:00AM |

This is a tentative course schedule. It is subject to change at the discretion of the instructor. All schedule changes will be reflected on Moodle.

Course Modifications for COVID-19

Because of the pandemic, this class will be delivered using the **HYFLEX** model. In this model, I will be in class every day. However, I will also live stream class sessions on MS Teams and save the live stream for later viewing. You can attend class in person or attend via the live stream. **This course is NOT DESIGNED to be asynchronous.** I intend for the recorded video to be used in emergencies when attending class or the live stream is not possible. In general, I expect you to be in class or on the live stream during class time. While in class, you must wear a mask and adhere to social distance rules. **I will ask you to leave if you refuse to follow these rules.**

Faculty have also been asked to hold office hours online instead of in person. My office hours are listed to MW 1:00PM to 3:00PM. During office hours I will leave MS Teams up and you can initiate a video chat with me at that time. If I am working with another student, I will respond in the chat. We can also schedule meetings so that you will be sure to get me when you need to. **Please do not drop by my office – we cannot socially distance because it is too small.**

Per university mandate these are the established rules for classroom use.

- Physical distancing in classrooms: Physical distancing will be maintained in classrooms with student separation of **at least 6 feet** in all directions. Classroom exits will be clearly identified and must be followed by all users. Students will be spread throughout the classroom by reducing the number of seats/desks available for students. Classroom organization, set up and number of seats/desks shall not be changed or altered by anyone. Students should seek alternative means of clarifying content or asking questions that do not involve staying after class to speak with the instructor.
- PPE, including face masks: Face masks are required in University indoor facilities and classrooms. Faculty are expected to enforce PPE and social distancing in their classrooms at all times. Students unwilling to comply with Bellarmine policies will be asked to leave the classroom. Any students with health or safety concerns about wearing a face covering must contact the Office of Disability Services prior to the beginning of classes. The Office of Safety and Security will be contacted should student refuse to comply with required PPE.
- Classroom sanitization: Students will be required to disinfect their chairs, desk, or other classroom areas using supplies provided **upon entering** the classroom. Faculty are responsible for cleaning surfaces used during instruction prior to the start of each class – this includes but is not limited to computer keyboard and mouse, webcam and tripod, lectern, chair, desk, etc.

Late Work Policy

Normally I do not take late work. I try to give you as much notice as possible when an assignment is due. At the same time, I want to be flexible. Therefore, you have a 24 grace period for all regular assignments, but not the midterm or final exams. The grace period means you can submit an assignment up to 24 hours after it is due without penalty. After that time, I will take assignments late with a 10% grade penalty per day for up to four additional days. This means you can turn an assignment up to five days late and still receive 60% of the maximum grade. I will not accept any assignments after five days. **I ask that you do not abuse policy. If I receive a significant number of late assignments, I will revoke the policy for the remainder of the semester. Like you, I have multiple classes and projects to work on; the deadlines I have set are not arbitrary and help me get everything done in a reasonable timeframe.**

Bellarmine University Mission

We are an inclusive Catholic university that educates students—mind, body, and spirit—for meaningful lives, rewarding careers, ethical leadership, and service to improve the human condition.

IMPORTANT INFORMATION FOR YOUR SUCCESS

As a Bellarmine University student, you are expected to be engaged in the learning process throughout the semester. We also understand circumstances may arise during the semester that may impact your success as a student. Please note the following resources that may be helpful to you based on certain circumstances.

ACADEMIC HONESTY

Bellarmino University exists for the sake of the advancement of knowledge; the pursuit of truth; the intellectual, ethical, and social development of students; and the general well-being of society. All members of our community have an obligation to themselves, to their peers, and to the institution to uphold the integrity of Bellarmine University. In the area of academic honesty, this means that one's work should be one's own and that the instructor's evaluation should be based on the student's own efforts and understanding. When the standards of academic honesty are breached, mutual trust is undermined, the ideals of personal responsibility and autonomy are violated, teaching and learning are severely compromised, and other goals of the academic community cannot be realized. For a thorough description of the University's policy, including penalties for acts of academic dishonesty and breaches of integrity, please refer to the Undergraduate Academic Policies' Academic Honesty and Integrity Policy in the current Bellarmine Course Catalog, <https://www.bellarmino.edu/one-bellarmino/>.

Bellarmino's post-baccalaureate programs, including professional programs, may have established policies addressing violations of academic honesty and integrity which may not mirror the penalties noted for the institution's baccalaureate/undergraduate programs. Students enrolled in the programs are responsible for familiarizing themselves with these policies and are subject to the penalties noted in the program should they be charged with a violation of academic honesty and/or integrity, and the Department Chairperson will enforce the program's policies.

UNIVERSITY-SPONSORED TRAVEL NOTIFICATION/EXTENDED ABSENCE

The University requires students who will be absent from class while representing the University to inform their instructors as follows: 1) students must meet with each instructor in the first week to discuss the attendance policy and arrangements for absences related to University-sponsored events; and 2) a week prior to each absence, student athletes must pick up their Absentee Notification Forms from the Athletics Office in Knights Hall and have them signed by one of the Assistant Athletic Directors before providing them to the instructor. Students participating in University events not sponsored by the Athletics Department must provide the instructor with a signed Student Absentee Notification Form, available on One Bellarmine, at the earliest possible opportunity, but not later than the week prior to the anticipated absence. The Student Absentee Notification Form does not serve as an excused absence from class. ***Your instructor has the final say about excused and unexcused absences and it is the student's responsibility to know and abide by the instructor's policy.***

Should you need to miss class because of a death in the family, hospitalization or extreme illness, you may contact the Dean of Students Office (502.272.8150) for assistance in notifying your professors.

MILITARY AND VETERAN RELATED ABSENCE POLICY

Bellarmino University acknowledges and appreciates the important contributions of our students who have served or are currently serving in our armed forces. In order to support these students, Bellarmine faculty pledge to provide reasonable allowances as described in the **Military and Veteran Related Absence Policy** (<https://www.bellarmino.edu/office-of-veteran-and-military-services/student-policies/>) to students who must be absent from class due to military obligations or required medical treatment for service-related conditions. Please see the Academic Policies in the Bellarmine University 2020-2021 Catalog for specific details.

STUDENT SUCCESS CENTER

The Student Success Center provides programs and services available to all students at the university and is committed to supporting every student. Students are encouraged to access services early and often, as the most successful students are those who utilize the resources available to them. The Student Success Center is located on the B-Level of the W. L. Lyons Brown Library and is home to Academic Advising, Tutoring Center, Writing Center, Testing Center, Pioneer Scholars Program, Learning Communities, and a variety of other programs and services. For more information, please visit www.bellarmino.edu/studentsuccess, email studentsuccess@bellarmine.edu, call 502.272.7400, or find the SSC on social media.

DISABILITY SERVICES

Students with disabilities who require accommodations (academic adjustments and/or auxiliary aids or services) for this course must contact the Director of Disability Services, Ronda Purdy, located in CNMH 076, or Jessiemarie Voigt, Disability Services Coordinator, in CNMH 074. Students can apply for services online at <https://bellarmine-accommodate.symlicity.com/> or call 502.272.8490 or email rpurdy@bellarmine.edu for more information. Students are encouraged to make these arrangements with Disability Services as early in the semester as possible so that a student and his/her course instructor can collaborate for a successful course experience.

STUDENT CONCERN REPORTING

The purpose of the Student Concern Report form is to keep Bellarmine University informed about student incidents and/or student well-being concerns. In addition, this form may be used to inquire about resources available to students. The form is located at <https://www.bellarmino.edu/studentaffairs/dean/student-concern-report/>. Use the form to submit concerns or incidents (mental health concerns, inappropriate behavior, harassment, hate speech, bias, sexual misconduct, or family concerns). If you have questions about this form or prefer to talk about the concern in person, feel free to reach out to the Dean of Students Office at 502.272.8150 or visit in person at Centro, Treece Hall, Rooms 225C or 225K. You can also email the Assistant Dean of Students and Deputy Title IX Coordinator, Natasha Begin, nbegin@bellarmine.edu.

TITLE IX and SEXUAL MISCONDUCT NOTIFICATION

Sexual misconduct (including sexual harassment, sexual assault, and any other nonconsensual behavior of a sexual nature) and sex discrimination violate University policies. Students experiencing such behavior may obtain confidential support from the Counseling Center (502.272.8480) and Campus Health Services (502.272.8313). To report sexual misconduct or sex discrimination, please contact Lynn Bynum, the Title IX Coordinator (502.272.8236), the Dean of Students Office (502.272.8150) or the Office of Public Safety (502.272.7777). Disclosure to University faculty or instructors of sexual misconduct, stalking, domestic violence, dating violence, or sex discrimination occurring on campus, in a University-sponsored program, or involving a campus visitor or University student or employee (whether current or former) is not confidential under University policy. Faculty and instructors must forward such reports, including names and circumstances, to the University's Title IX Coordinator. For more information, see the Sexual Misconduct Advocacy and Resource Guide at www.bellarmino.edu/sexualmisconduct.

BIAS INCIDENT REPORTING

Bellarmino University values and celebrates the diverse backgrounds, cultures, experiences and perspectives of our community members. Bias-related incidents, including slurs based on racial or ethnic identity, faith tradition, gender identity, sexual orientation, ability, and others, create a hostile educational, living and working environment, and such acts are not tolerated in our **academic community**. **The term "bias-related" refers to language, behaviors and acts committed against or directed toward a person or property that are motivated, in whole or in part, by a bias against race, color, religion, sex, sexual orientation, gender identity, national or ethnic origin, age, status as an individual with a disability, protected veteran status, genetic information, or other protected classes as required by**

law and that interferes with one's educational opportunities or disrupts the learning environment. These categories are examples and are not an exhaustive list of attributes or characteristics protected under this policy.

If you experience or witness a bias-related incident we encourage you to report it to University officials. This can be done in one of two ways - by contacting the Office of Public Safety or through the Student Concern form. The Office of Public Safety can be reached 24 hours a day, 7 days a week 502.272.7777. They will refer the matter to the Dean of Students Office. The report will be reviewed promptly and treated with the highest level of confidentiality possible. You may also report a bias-related incident by completing the Student Concern Form (reports may be made anonymously) located at www.bellarmino.edu/studentaffairs. For more information about bias-related incidents, contact Patrick Englert, Associate Vice President for Student Affairs, penglert@bellarmine.edu or the Dean of Students Office.

CHOSEN NAME

To encourage a more inclusive and welcoming campus, Bellarmine has established the policy whereby a community member has the option to use a chosen name on campus whenever possible. The chosen name must be reasonable and may not be used to misrepresent the individual. This name will appear wherever a legal name is not necessary. A student wishing to use a chosen name may do so by visiting the self-service page on one.bellarmino. After clicking on self-service, click the displayed username in the upper right-hand corner of the page. A drop-down menu will appear, click on user profile, and under personal identity details click the pencil to edit. Be sure to click save after entering information. Use of the legal name will continue to be required for certain documents, including but not limited to, payroll records, billing records, financial aid documents, transcripts, medical records and federal immigrations documents. Students will need to visit the help desk to get a new ID that reflects the chosen name. Students may contact the Registrar's office at registrar@bellarmine.edu or 502-272-8133 for questions about updating chosen name in self-service.

PRONOUNS AND GENDER IDENTITY

Students may select pronouns to be displayed on class rosters. Pronouns are viewable to faculty and staff members of the Bellarmine community. If no pronoun has been selected, pronouns will not be displayed. Gender identity is not displayed on class rosters. A student wishing to select pronouns may do so by visiting the self-service page on one.bellarmino. After clicking on self-service, click the displayed username in the upper right-hand corner of the page. A drop-down menu will appear, click on user profile, and under personal identity details click the pencil to edit. Be sure to click save after entering information. Students may contact the Registrar's office at registrar@bellarmine.edu or 502-272-8133 for questions about updating pronouns and/or gender identity in self-service. For support or additional resources regarding gender identity contact the Office of Identity and Inclusion at jfrazier2@bellarmine.edu or 502-272-7304.

This syllabus is subject to change at the discretion of the instructor. Any changes will be announced and discussed in class and a copy of the updated syllabus will be posted on the LMS.