**CS150-01: Computer Programming for the Liberal Arts**

**Spring 2023, Section 1**

**Important**: This syllabus and its components are subject to change based on modifications to applicable guidelines. Your instructor will attempt to communicate all changes to you in a timely manner.

**Instructor Information**

* Name: Sayani Sarkar, Ph.D.
* Office location: Pasteur Hall 006M
* Office hours: **M/W 11 AM to 12.30 PM**, other times by appointment except for Fridays
* Telephone: (502) 272-7984
* Email: ssarkar@bellarmine.edu

**Course Information**

Course Description

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.**

**Modality**: Traditional/face-to-face

**Prerequisites/Corequisites**: None

**Credit Hours**: 3

Learning Outcomes

Program Outcomes

By the end of this course, students will be able to:

| Objective/Outcome | Associated Course(s) or Assessment(s) |
| --- | --- |
| 1. The ability to develop computer programs to solve problems. | Labs, Exams, and the Final Exam |
| 2. Proficiency with operating systems and computer networks. | N/A |
| 3. Competence in the design and development of software engineering tools. | Labs, Exams, and the Final Exam |
| 4. Understanding of contemporary issues in translators. | N/A |

Course Methodology

I will conduct this course using an active-learning approach. While there will be lectures during class times; however, most learning will occur through activities during class sessions. I will use several instruments to assess your learning including quizzes, in-class assessments, regular exams, and a final exam. The Evaluation section of this syllabus provides more detail on assessment. The Course Schedule for this class is in Moodle where it will be updated as necessary.

Course Materials

Note: The 2002 Technology, Education, and Copyright Harmonization Act (TEACH Act) permit select copyrighted works to be posted online for this course under strict conditions. Students may use these works solely as instructional resources and not share them with anyone not enrolled in this course, nor may they maintain copies of these works beyond the end of this term.

Required Materials

Python Crash Course, 2nd Edition: A Hands-On, Project-Based Introduction to Programming

**Course Activities**

Active participation will be the best way for you to learn and understand the material. To learn to code, you must code. 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. This may include consuming content or practicing programming concepts we have covered. 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 times with appropriate notice. If meeting in person is not possible, e-mail me. I cannot help you if I don’t know you are struggling.

| Activity Title/Name | Objective(s) | Value | Due Date | Description/Notes |
| --- | --- | --- | --- | --- |
| 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 | 40 points | 1 to 2 weeks | The assignments should be completed individually unless specifically stated. |
| Quizzes | After each chapter is complete there will be quizzes on the subject matter | 10 points | - | - |
| Attendance/In-class completed notebook submission | We will be working on in-class notebooks. After completion of each chapter, you will have to submit the completed class notebook within the assigned time using GitHub and Moodle | 10 points | End of each chapter |  |
| Mid-Term Exam (2) | Access your understanding of the material covered in class up to that point. | 20 points | Midterm1: 02/15/2023  Midterm2 part1:  04/19/2023  Part2: 04/21/2023 | The regular exams will be closed books, and closed notes. |
| Project (2-3) | Access your understanding of techniques covered in class | 20 points | Final project: 5/1/2023  8 AM – 11 AM | Group of two/ three |

**Schedule**

**Module 0 – Course Introduction**

Prepare:

* Reading chapter 1 of Textbook

**Module 1 – Variables and Simple Data Types**

##### Prepare

* Reading Chapter 2 of Textbook

##### Practice

* Assignment 1

**Module 2 – Introducing Lists, Tuples**

##### Prepare

##### Reading Chapters 3,4

##### Practice

* Assignment 2

##### Perform

* Quiz 1

**Module 3 – if Statements**

##### Prepare

##### Reading Chapter 5

##### Practice

* Assignment 3

##### Perform

* Quiz 2

**Module 4 – Dictionaries**

##### Prepare

##### Reading Chapter 6

##### Perform

* Quiz 3

**Module 5 – While Loops**

##### Prepare

##### Reading Chapter 7

##### Practice

* Assignment 4

##### Perform

* Quiz 4
* Project 1

**Module 6 – Functions**

##### Prepare

##### Reading Chapter 8, 11

##### Practice

* Assignment 5

**Module 7 – Classes**

##### Prepare

##### Reading Chapter 9, 11

##### Practice

* Assignment 6

##### Perform

* Quiz 6
* Project 2

**Module 8 – Numpy**

##### Prepare

##### Reading materials will be provided

##### Practice

* Assignment 7

The tentative schedule above may change at the discretion of the instructor. Also, remember that many important dates and deadlines are published annually in the University’s Master Calendar at <https://www.bellarmine.edu/registrar/academic-calendars/>, including the final exam schedule (<https://www.bellarmine.edu/registrar/final-exam-information/>). It is your responsibility to be aware of all academic calendar dates and to meet the published deadlines

**Grading Information**

|  |  |
| --- | --- |
| **Category** | **Percentage of Total Grade\*** |
| Assignments (In class and Take home) | 40% |
| Quizzes | 10% |
| Regular Exams (2) | 20% |
| Project (2) | 20% |
| Attendance and Participation | 10% |

\*For categories with multiple items, each will be weighted equally.

Grading Scale

All grades are calculated to the nearest hundredth and will be rounded up

| Letter Grade | G.P.A. Equivalent | Lower Limit (%) | Upper Limit (%) | Lower Limit (points) | Upper Limit (points) |
| --- | --- | --- | --- | --- | --- |
| A+ | 4.00 | 97.00 | 100.00 | 970 | 1,000 |
| A | 4.00 | 93.00 | 96.99 | 930 | 969 |
| A- | 3.67 | 90.00 | 92.99 | 900 | 929 |
| B+ | 3.33 | 87.00 | 89.99 | 870 | 899 |
| B | 3.00 | 83.00 | 86.99 | 830 | 869 |
| B- | 2.67 | 80.00 | 82.99 | 800 | 829 |
| C+ | 2.33 | 77.00 | 79.99 | 770 | 799 |
| C | 2.00 | 73.00 | 76.99 | 730 | 769 |
| C- | 1.67 | 70.00 | 72.99 | 700 | 729 |
| D+ | 1.33 | 67.00 | 69.99 | 670 | 699 |
| D | 1.00 | 65.00 | 66.99 | 650 | 669 |
| F | 0.00 | 0.00 | 64.99 | 0 | 649 |

**Course Policies**

Attendance

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 you must miss class or as soon as possible after class to let me know why you missed it**.

Classroom Expectations

In-person class sessions have been conducted for this academic year. Mask is recommended during class sessions regardless of vaccination status. Mask should cover your nose and mouth; bandanas are not allowed. No food is allowed in the classroom.

Communication

I check email twice a day Monday-Friday. I will not check my email on the weekends.

The subject line for your emails should start with:

[CS-XXX-YY] – (whatever you want to put in the rest of the subject). XXX should be the course number and YY should be the section number, for example: [CS-150-01] – Question about the midterm exam.

Your email messages should also contain a greeting and a closing. See below for an example:

Dr. S. –

I need to miss class on Wednesday because of a doctor’s appointment.

Thanks,

Amazing Student

Technology

You will provide individual workstations and it’s encouraged to bring your own laptop during class time. **Required equipment/hardware**

*Note that the use of Chromebooks or mobile devices running mobile operating systems may not be supported.*

* A computer manufactured within the last five years, with a current operating system and using physical keyboard and mouse input (or applicable alternative as needed for students with accessibility-based accommodations).
* An audio-visual recording device, such as a webcam or smartphone with a camera.
* Reliable Internet access at speeds of at least 25 Mbps download and 3 Mbps upload.

**Required applications/software**

* An updated, full-featured web browser such as Chrome, Safari, Edge, or Firefox.
* Microsoft Office. This suite of tools is available to all Bellarmine students at no additional charge, in both online and desktop application formats. Information on accessing and downloading Microsoft tools for free, as a Bellarmine student, can be obtained at <https://one.bellarmine.edu/community/tsc/services/Pages/Software.aspx>.
* A PDF reader, such as a modern web browser, Apple Preview or Adobe Acrobat Reader.

**Library access off campus**

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 to access off-campus; you can find necessary instructions at <https://libguides.bellarmine.edu/off_campus>.

**Technical 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](mailto:tsc@bellarmine.edu).

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 that may impact your success as a student. Note the following resources that may be helpful to you based on certain circumstances.

Academic Honesty

Bellarmine 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, refer to the Undergraduate Academic Policies’ Academic Honesty and Integrity Policy in the current Bellarmine Course Catalog, found at <https://www.bellarmine.edu/one-bellarmine/>.

Bellarmine’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 Dean and/or Department Chairperson will enforce the program’s policies.

University-sponsored Travel Notification / Extended Absence

While students are expected to attend scheduled classes, Bellarmine University faculty will make every effort to accommodate students who are absent from class due to university-sponsored activity. This policy protects students from being penalized for a missed class time due to university-sponsored activity. The faculty will provide reasonable opportunities to make up missed work that would normally occur in class (e.g., quizzes, tests, presentations, performances) and may include a selection of comparable coursework as agreed upon by the faculty and student. This makeup process will apply even if the instructor has the policy to drop a low test/quiz/presentation score. If a student has a test or quiz, they miss, the points for the make-up work cannot be incorporated into the final exam. This is intended to have exams drawn up within a reasonable time frame. It is the student’s responsibility to make prior arrangements with the instructor to turn in written materials (e.g., assignments, papers, projects) on or before the assigned due date.

It is the responsibility of each student to inform their instructors of a class absence for such events by doing the following:

* meet with each instructor in the first two weeks of the semester to discuss the days they will miss class and determine plans to make up for missed work.
* one week prior to each absence, notify the instructor of the class day they will miss. Exception: a person who joins a team or club after the first two weeks would provide the initial notification upon joining the group.

The student will initiate this process by providing the Student Absentee Notification Form (<https://www.bellarmine.edu/registrar/forms/>). The student and instructor will work through the form, which details expectations for the successful completion of missed coursework. See the University-Sponsored Activity Absence Policy (<https://catalog.bellarmine.edu/2022-2023/undergraduate-academic-policies#Class_Attendance>) in the current Bellarmine University Course Catalog for specific details.

Should you need to miss class due to a death in the family, hospitalization, or extreme illness, you may contact the Dean of Students, Leslie Maxie, at [lmaxie@bellarmine.edu](mailto:lmaxie@bellarmine.edu) or 502.272.8051 for assistance in notifying your professors and specific information about your responsibility in making up work.

Military- and Veteran-Related Absence Policy

Bellarmine University acknowledges and appreciates the important contributions of our students who are serving or have served in our armed forces. To support these students, Bellarmine faculty pledge to provide reasonable allowances as described in the Military and Veteran Related Absence Policy (<https://www.bellarmine.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. See the Academic Policies in the University 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, visit the SSC website (<https://www.bellarmine.edu/studentsuccess>), email [studentsuccess@bellarmine.edu](mailto:studentsuccess@bellarmine.edu), call 502.272.7400, or find the SSC on social media.

Accessibility Resource Center

Students with disabilities who require accommodations such as academic adjustments and/or auxiliary aids or services for this course may apply for services by filling out the online application found on the ARC website (<https://www.bellarmine.edu/studentaffairs/disabilityservices/>) under the Apply for Services link (<https://www.bellarmine.edu/studentaffairs/disabilityservices/acc/>). Contact the Accessibility Resource Center at 502.272.8490 or email [arc@bellarmine.edu](mailto:arc@bellarmine.edu) for more information about the accommodation process. The Accessibility Resource Center occupies CNMH 074 and CNMH 076. Students are encouraged to make these arrangements as early in the semester as possible so that the student and their course instructor can collaborate for a successful course experience.

Counseling Center and Health Services

Recognizing the impact that mental and physical health can have on academic performance, the Bellarmine University Counseling Center and Health Services provide free and confidential services to all currently enrolled students.

The Counseling Center provides a range of mental health services including short-term individual, couples, and group counseling; crisis intervention; consultation; and referral. The Counseling Center is located on the 4th floor of Nolen C. Allen Hall. For more information or to schedule an appointment, call 502.272.8480, email [counselingcenter@bellarmine.edu](mailto:counselingcenter@bellarmine.edu) or visit the Counseling Center website (<https://www.bellarmine.edu/studentaffairs/counselingcenter/>).

Health Services provides a range of services, including, but not limited to assessment; referral; over-the-counter medications; education on wellness, diet, exercise, and health; vaccinations; allergy antigen shots; and emergency response on campus. Health Services is located on the 1st floor of Newman Hall, room 121. All appointments, check-in, and questions must be completed via phone at 502.272.8048. You may also visit the Health Services website (<https://www.bellarmine.edu/studentaffairs/healthservices>) or email [healthservices@bellarmine.edu](mailto:healthservices@bellarmine.edu).

In the event of a mental health or medical emergency after hours, contact the Office of Public Safety at 502.272.7777.

Student Concern Reporting

Students are encouraged to report instances of concern that they experience or witness. As Bellarmine strives to be an educational environment that allows all students to thrive, it is helpful to sometimes involve university officials who may be able to provide resources, support, or options for additional action.

The Student Concern & Comment Form (<https://bellarmine.wufoo.com/forms/k15jgt3a1o0dgae/>) allows students to report incidents and/or student well-being concerns. Anonymous reporting is available, however, the ability for administrators to follow up on an anonymous report may be limited. Once submitted, the report is reviewed by the Dean of Students Office and the Title IX Office for appropriate follow-up.

Examples of reportable concerns include mental health, inappropriate or concerning behavior, harassment, bias related to identity, sexual misconduct, student well-being, and family concerns. If you experience or witness one of these incidents, you are encouraged to report it to university officials. In addition to the Report Form, reports may also be made to the Office of Public Safety (502.272.7777), the Dean of Students Office (502.272.8051) or the Title IX Office (502.272.7337).

***Title IX and Sexual Misconduct Notification***

Sexual misconduct (including sexual harassment, sexual assault, stalking, dating violence, domestic violence) 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, email Natasha Begin, Chief Title IX Officer, at [nbegin@bellarmine.edu](mailto:nbegin@bellarmine.edu) or call the Office of Public Safety (502.272.7777). Disclosure to University faculty or instructors of sexual misconduct, 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 Title IX Officer. For more information, see the Sexual Misconduct Advocacy and Resource Guide at <https://www.bellarmine.edu/title-ix>.

## Chosen Name

To encourage a more inclusive and welcoming campus, Bellarmine has established a 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. bellarmine. After clicking on self-service, click the username displayed in the page's upper right-hand corner. 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 the 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 immigration 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](mailto:registrar@bellarmine.edu) or 502-272-8133 for questions about updating their 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. bellarmine. After clicking on self-service, click the username displayed in the page's upper right-hand corner. A drop-down menu will appear, click on the user profile, and under personal identity details click the pencil to edit. Be sure to click save after entering the information. Students may contact the Registrar’s office at [registrar@bellarmine.edu](mailto: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 [edixon@bellarmine.edu](mailto:edixon@bellarmine.edu) or 502-272-8303.

University Mission

Our 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.

Our Vision

We will become the leading Catholic university in the South by embracing innovation and creativity, forging new and mutually beneficial partnerships, intentionally diversifying curricula, and community, and providing a distinctive and transformative student experience.

Our Values

Bellarmine University finds its Catholic identity in the inclusive spirit of Thomas Merton. We believe in the search for the true self, the interconnectedness of life, and the solidarity of the human spirit, which transcends ethnic, religious, and social divisions. We educate the whole person to realize their highest potential as part of an interconnected world. Our values are Academic Excellence, Intrinsic Dignity, Social Responsibility, Integrity, Hospitality, and Stewardship.