

Introduction to Programming

COURSE CODE: CSC1631

COURSE DESCRIPTION

This course will provide students with an introduction to computational thinking, problem solving and programming. It is intended for students with no prior knowledge of programming. Its aim is to help students feel confident writing small programs that can solve problems. This course is a good starting point for taking more computer science courses.

Credits: 3

COMMUNICATION:

Communication: Please use your email in Canvas to contact me throughout this course. I will respond to you within 12 hours of your email.

TEXTBOOK AND MATERIALS: (Textbooks are supplied by the Sending School or student unless alternative arrangements have been made)

- Schneider, David I., Introduction to Programming Using Python. Pearson. ISBN: 9780134058221 - <https://www.vitalsource.com/referral?term=9780134058313>
- Python 3.7 - Note: All software is open source - <https://www.python.org/downloads/> (Installation instructions in Appendix C of course textbook)
- Students should have a notebook/binder for this class, with suggested sections for Class Notes, supplementary Readings, completed Homework assignments, Study Guides, and completed Tests.

COURSE TECHNICAL REQUIREMENTS

Students will need the ability to access our online course content through a browser running on a desktop or laptop computer. Mobile phones and tablets may not be adequate or appropriate for some aspects of the course materials. All popular browsers are supported, but we recommend Chrome or Firefox if available. A web cam is highly recommended.

A productivity suite such as Microsoft Office, Microsoft Office 365, Google G-Suite, or Open Office is recommended or may be required for Landmark College Online courses. If students will be accessing courses from school networks, it is important to note that some required materials are hosted on public sites including YouTube and Vimeo. If your school employees content filtering systems which block access to such sites, students may have issues completing their assignments.

COURSE EXPECTATIONS

Reading at a college-level is the primary means of information gathering. Effective and efficient reading form the basis for college-level writing, research, and discussion. Students will be expected to read deeply to enable them to understand, discuss, and apply the information to a variety of academic tasks. Working with college-level reading requires determining the meaning of unfamiliar vocabulary, using main ideas and supporting

details to support content literacy, and varying the use of critical reading techniques to logically comprehend concepts.

Writing at a college-level supports comprehension of content and enhances critical thinking. Students will be expected to engage in academic writing that demonstrates an understanding of content knowledge, a clear purpose, and organization flow. Attention to spelling, punctuation, and grammar are expectations for written assignments.

Communication is integral to success in an online college-level course. Students are expected to fully access all instructor-initiated communications, ask questions if clarification is needed, and follow-up on any actions assigned. Communication will be primarily in written modes but may include oral communication through videos and conferences.

Self-management is a core component of online learning. A key expectation is that students will adhere to established due dates and assignment guidelines for the course learning activities. All assignments, tests, and quizzes are to be submitted on the date indicated for full point consideration. Any work submitted after that time will receive partial point value as per the course guidelines.

ADDITIONAL EXPECTATIONS

See Addendum A: College Guidelines document for a comprehensive overview of course expectations.

COURSE FORMAT

In order to integrate online educational experiences and knowledge into Introduction to Programming has been designed to incorporate synchronous and asynchronous learning opportunities. Students will engage with the instructor through regular feedback on assignments, periodic conferences/work sessions, and email communications. All are integral to the learning opportunities embedded in the course.

COURSE OBJECTIVES & GOALS

The skills focus will be on areas of advanced study strategies, critical thinking, and writing that students need to prepare for upper-division courses. These skills/goals will include:

- Understanding how to break a problem into steps in order to solve it.
- Being able to discuss the how to convert a problem into programming code
- Being proficient in simple programming tasks using the Python language

COURSE TOPICS

- Unit 1: Introduction (Week 1)
- Unit 2: Core Objects, Variables, Input, & Output (Weeks 2-4)
- Unit 3: Structures That Control Flow (Weeks 5-6)
- Unit 4: Functions (Weeks 7-8)
- Unit 5: Processing Data (Weeks 9-11)
- Unit 6: Miscellaneous Topics (Weeks 12-15)

COURSE GRADING

- Weekly Discussions 30%
- Homework Assignments 30%

• Final Project	20%
• Quizzes	20%
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	100%

EXPLANATION OF COURSE ASSESSMENTS AND GRADING CRITERIA

1. Individual Discussions/ Online Participation (30%)

Since this is an online course, all of the participation will be done online. Each week there will be discussion topics. These are a series of questions or points to consider regarding the course materials posted that week.

To earn full credit for the Participation component of the grade, students will be expected to complete the following during weeks 1 through 15 of the course:

- **Respond to 1 Discussion Topic each week;** respond to the topic by end of day **Thursday (midnight EDT)**. Some weeks, the discussion topic will be on an issue or a review of a paper. For this type of discussion topic, the response should consist of approximately 200-250 words and include your own insights into the topic. Any relevant sources used within the post should be cited appropriately. Other weeks, you will be asked to present your solutions to a set of problems.
- **Post (at least) 2 other substantive messages to the Discussions each week** by end of day **Sunday (midnight EDT)** each week. If the discussion topic was a paper review or general discussion question, your response should be a reaction to the posting of a classmate or a request for additional clarification. The assumption is that you will read through the posts of your classmates to enhance your learning; respond to those of your choice, based upon your own experiences and insights.

Keep in mind that these postings to the Discussions bulletin board will be as rich as we make them; we can have some interesting discussions and share our experiences during the course. They are required to encourage you to share your knowledge and ideas while gaining from the experiences of your peers as well.

Grading - Discussions

Each week, a discussion question is provided. Students are required to post an original response by Thursday and two substantive replies to the posts of others required by Sunday. 8 raw points may be earned each week:

Maximum raw points earned for on-time original response: 4 points each.

Since there are two types of discussion topics, the grading criteria will vary from week to week based upon the type.

For discussion topics on an issue or review of a paper:

- Answers all questions asked: 1 point
- Includes shared industry experiences and/or relates concepts to the topic notes and readings as appropriate: 1 point
- Grammar/format/sources noted as appropriate: 1 point
- Sufficient detail; original responses are requested to be 200-250 words. 1 point

For solutions to problem sets:

- Solutions provided for all problems: 3 points
- Formatting/presentation: 1 point
- 2 points will be deducted for an original response that is 1 day late; 0 points earned for original responses more than 1 day late.
- Please note that a score of 0 points will be awarded for any posts that do not appear to be original.

Maximum raw points earned for each on-time substantive response: 2 points each.

For discussion topics on an issue or review of a paper:

- Substantive (beyond an "I agree" post) with follow-on points or questions to extend the conversation: 1 point
- Grammar/format/sources noted as appropriate: 1 point

For solutions to problem sets:

- Substantive review of other student's solution with follow-on questions: 2 points
- 0 points earned for late substantive replies.

2. [Homework Assignments \(30%\)](#)

There are graded exercises and projects which will be assigned at various points in the semester. Each assignment is designed to give you some practice on the material that you learned in the previous weeks. All assignments are available the relevant week.

3. [Final Project \(20%\)](#)

There will be a project which you will work on towards the end of the semester. This may be done individually or in a group. All project work will be presented online in a virtual poster fair.

4. [Quizzes \(20%\)](#)

There will be a series of quizzes which will test your knowledge of various topics.

Landmark College Grading Scale

Letter Grade	GPA Equivalency	Grade Scale	Definition (credit courses only)
A	4.0	93-100	Excellent; distinguished achievement in all phases of the course
A-	3.7	90-92	
B+	3.3	87-89	Very good; high level of achievement in some phases of the course
B	3.0	83-86	
B-	2.7	80-82	
C+	2.3	77-79	Fair; basic understanding of subject has been demonstrated
C	2.0	73-76	
C-	1.7	70-72	
D+	1.3	67-69	Poor; minimal performance
D	1.0	63-66	
D-	0.7	60-62	Passing
F	0.0	0-59	Failure

WORK COMPLETION

Students who do best in this course complete readings and homework on a regular basis—and on the days that such assignments are due to be discussed and reviewed. Extensions: Requests for deadline extensions should be made *2 class days in advance of the due date* in order to be considered for approval.

HOMEWORK POLICY

Homework is due each week. All assignments are available on the assignments page and in the suggested student schedules as well on the Canvas “to-do list” and calendar. Assignments are directly correlated to the learning taking place at the time. **As with any college course, established due dates will be strictly adhered to throughout the semester.** If you find yourself challenged with an assignment, contact your instructor to discuss an Action Plan.

COURSE TOPICS & SCHEDULE

WEEK	TOPIC	READINGS/VIEWINGS	TASKS
Week 1	Getting Started with Canvas Course Introduction Chapter 1: Introduction to Computing and Problem Solving	Review Canvas Tutorials Page Welcome Video & Syllabus Watch Chapter 1 lecture Read Chp. 1: pp. 1-21 Read Appendix C	Introduction Post Email to instructor Assignment submission Practice Quiz Install Python and IDLE IDE
Week 2	Chapter 2.1: Numbers	Watch weekly introduction video Read Chp. 2.1: pp. 24-31 Watch Assignment Statements Videonote	Practice Exercises (pp. 31) Chapter 2.1 Discussion Quiz 1 Homework Assignment 1
Week 3	Chapter 2.2: Strings Chapter 2.3: Formatting Output	Watch weekly introduction video Read Chp. 2.2: pp. 35-43 Watch String Functions Videonote Read Chp. 2.3: pp. 49-54 Watch Print Formatting Videonote	Practice Exercises (pp. 43, 54, and 56) Chapter 2.2 Discussion Quiz 2 Homework Assignment 2
Week 4	Chapter 2.4: Lists, Tuples, and Files - An Introduction Chapter 3.1: Relational and Logical Operators	Watch weekly introduction video Read Chp. 2.4: pp. 58-65 Watch List Object Videonote Read Chp. 3.1: pp. 78-85 Watch Relational and Logical Operators Videonote	Practice Exercises (pp. 66 and 86) Chapter 2.4 Discussion Quiz 3 Homework Assignment 3
Week 5	Chapter 3.2: Decision Structures	Watch weekly introduction video Read Chp. 3.2: pp. 89-97 Watch Decision Structures Videonote	Practice Exercises (pp. 95) Chapter 3.2 Discussion Quiz 4 Homework Assignment 4
Week 6	Chapter 3.3: The <i>while</i> Loop Chapter 3.4: The <i>for</i> Loop	Watch weekly introduction video Read Chp. 3.3: pp. 105-110	Practice Exercises (pp. 111 and 127) Chapter 3.4 Discussion

WEEK	TOPIC	READINGS/VIEWINGS	TASKS
		Watch <i>while</i> Loop Videonote Read Chp. 3.4: pp. 118-127 Watch <i>for</i> Loop Videonote	Quiz 5 Homework Assignment 5
Week 7	Chapter 4.1: Functions, Part 1	Watch weekly introduction video Read Chp. 4.1: pp. 144-156 Watch Scope of Variables Videonote	Practice Exercises (pp. 156) Chapter 4.1 Discussion Quiz 6 Homework Assignment 6
Week 8	Chapter 4.2: Functions, Part 2 Chapter 4.3: Program Design	Watch weekly introduction video Read Chp. 4.2: pp. 164-172 Read Chp. 4.3: pp. 182-188 Watch Lambda Expressions Videonote	Practice Exercises (pp. 172) Chapter 4.3 Discussion Quiz 7
Week 9	Chapter 5.1: Processing Data, Part 1	Watch weekly introduction video Read Chp. 5.1: pp. 192-197 Watch Reading Text Files Videonote	Practice Exercises (pp. 202) Chapter 5.1 Discussion Quiz 8 Homework Assignment 7
Week 10	Chapter 5.1: Processing Data, Part 1	Watch weekly introduction video Read Chp. 5.1: pp. 198-202 Watch Sets Videonote	Practice Exercises (pp. 202) Chapter 5.1 Discussion – Part 2 Quiz 9
Week 11	Chapter 5.2: Processing Data, Part 2	Watch weekly introduction video Read Chp. 5.2: pp. 207-211 Watch Accessing Data in a CSV file Videonote	Practice Exercises (pp. 212) Chapter 5.2 Discussion Quiz 10 Homework Assignment 8
Week 12	Chapter 6.1: Exception Handling	Watch weekly introduction video Read Chp. 6.1: pp. 244-247 Watch Exception Handling Videonote	Practice Exercises (pp. 247) Chapter 6.1 Discussion Quiz 11

WEEK	TOPIC	READINGS/VIEWINGS	TASKS
Week 13	Chapter 6.4: Recursion	Watch weekly introduction video Read Chp. 6.4: pp. 269-273 Watch Recursion Videonote	Practice Exercises (pp. 273) Chapter 6.4 Discussion Quiz 12
Week 14	Chapter 5.3: Dictionaries	Watch weekly introduction video Read Chp. 5.3: pp. 221-2 Watch Dictionaries Videonote	Practice Exercises (pp. 231) Chapter 5.3 Discussion Quiz 13 Final Project

Course Policies

TECHNOLOGY AND SYSTEM REQUIREMENTS

Students will need the ability to access our online course content through a browser running on a desktop or laptop computer. Mobile phones and tablets may not be adequate or appropriate for some aspects of the course materials. All popular browsers are supported, but we recommend Chrome or Firefox if available. A web cam is highly recommended.

A productivity suite such as Microsoft Office, Microsoft Office 365, Google G-Suite, or Open Office is recommended or may be required for Landmark College Online courses.

If students are accessing courses from school networks, it is important to note that some required materials are hosted on public sites including YouTube and Vimeo.

Consider adding a text to speech option such as Speak It and a dictionary option such as Google Dictionary if needed.

CLASSROOM BEHAVIOR EXPECTATIONS

"All students and staff of Landmark College are members of a unique educational community; whose goal is to enable each student to tap his or her full potential for success. Such a challenging goal requires tremendous individual effort on the part of each student and cooperative effort on the part of each member of the Landmark community. The guiding principles of the Landmark community include hard work, respect for others and oneself, honesty, personal accountability, and careful organization of time and materials."

More information on the Student Code of Conduct can be found on page 3 of the [Student Handbook](#).

COMMUNICATION

Ongoing and timely communication is critical in a collaborative online learning environment. Therefore, in keeping with accepted standards of professionalism, responses to communications, originating from students or the instructor will take place within 24 hours (or by the end of the next business day in the case of weekend communication). In some cases, communications will be sent that require a response within 24 hours. Communication is a graded aspect of the course.

DISCUSSION EXPECTATIONS

Ground Rules for Online Discussions

1. **Participate:** Students must contribute to the conversations. Providing insightful commentary in the online discussions is a graded requirement for passing the course.
2. **Use Proper Writing Style:** A virtual classroom is a professional environment. Correct spelling, grammar, and style are expected in all scholarship and academic writing.
3. **Respect Diversity:** Derogatory and sarcastic comments and jokes that marginalize anyone are unacceptable. Offensive language—or language that could be construed as offensive—should be avoided and defused.
4. **No Flaming:** Criticism must be constructive, well-meaning, and well-articulated. Rants directed at any contributor are unacceptable. Profanity is unacceptable in any situation.

HOMEWORK POLICY

Assignments are directly correlated to the learning taking place at the time. In addition, the course goals and objectives include a focus on maintaining an effective organization system to manage course materials, support assignment completion, and enhance participation in course discussions, quizzes, and tests. Therefore, established due dates will be strictly adhered to throughout the semester. If you find yourself challenged with an assignment, contact your instructor to discuss an Action Plan.

OFFICE HOURS

Office hours will be scheduled by your course instructor and available in the syllabus. Times may vary as we seek to address schedules that vary across schools and states. Office Hours will be held via Conferences in the Canvas course website.

College Policies

STANDARDS OF CONDUCT

All students and staff of Landmark College are members of a unique educational community, whose goal is to enable each student to tap his or her full potential for success. Such a challenging goal requires tremendous individual effort on the part of each student and cooperative effort on the part of each member of the Landmark community. The guiding principles of the Landmark community include hard work, respect for others and oneself, honesty, personal accountability, and careful organization of time and materials. The following standards of conduct are examples and general expectations for all student members of the Landmark College community:

1. **Honesty:** Students will exhibit honesty in academic endeavors and in all aspects of campus life.
2. **Safety:** Students will make a commitment to contribute to a safe, clean, congenial, and productive living & learning environment.
3. **Understanding:** Students will make a commitment to understand their own strengths and challenges, and to work towards academic and personal growth.
4. **Respect for Others:** Students will show respect for the feelings, time, efforts, and physical well-being of others, and for their capacity for growth.
5. **Respect for Property:** Students will show respect for the property and materials of Landmark College as well as the personal property of all members of the Landmark community.
6. **Respect for Community:** Students will respect the rules and regulations of Landmark College and its governing bodies, and the laws of the State of Vermont and of the United States.

ACADEMIC HONESTY AND PLAGIARISM POLICY

“As an academic community, Landmark strives to instill and foster intellectual honesty and integrity. Effective evaluation of student work can occur only in an environment in which intellectual honesty is respected. Academic dishonesty is a clear violation of academic integrity and academic responsibility.”

Academic integrity and responsibility are important in the classroom. Academic dishonesty may include, but is not limited to, plagiarism (of references or other students), failing to appropriately cite sources or figures, or submitting work completed by another person.

See more at: <http://catalog.landmark.edu/content.php?catoid=9&navoid=186#academic-dishonesty-and-plagiarism>

ACCOMMODATIONS POLICY

Given the nature of Landmark Colleges' approach to teaching, students may find that many of the disability related academic accommodations which might be customary at traditional institutions of higher education may not be needed with a Landmark College online course.

However, if you feel that you may need individual academic accommodations, the College has policies and procedures in place to evaluate requests and ensure access. To view policies and procedures for requesting academic accommodations at Landmark College please visit: <https://www.landmark.edu/student-life/our-community/request-for-accommodations>

Learning Outcomes

Computer Science Program Goal	Course Learning Outcomes (based on Program Goal)
1. Demonstrate fundamental game production skills including animation, 3-D modeling, game design and programming.	a) Design, implement, test and debug programs that use standard conditional and iterative control structures and functions in one programming language. b) Create appropriate algorithms and data structures for solving a given problem. c) Employ object-oriented design and the concepts of encapsulation, abstraction, inheritance, and polymorphism
2. Design, develop, and manage multimedia (script, graphics, sounds, animation, & video) and interactive game projects.	a) Design, prototype, and evaluate an engaging interactive system for entertainment or education b) Create programs that support a graphical user interface c) Identify the range of possibilities for games engines, including their potential and their limitations.
3. Apply Human-computer interaction theory to product development.	a) Evaluate game elements based on the genre of the game b) Criticize product development based on user-centered theory
4. Incorporates gaming industry business practices in project development.	a) Communicate the narratives necessary for compelling game design. b) Describe the societal aspects of gaming.