LIBERTY UNIVERSITY

Online · School of Business · Computational Sciences

# Introduction to Programming

## CSIS-111

CG Section 8WK 11/08/2019 to 04/16/2020 Modified 04/06/2022

## Course Description

Introduction to structured programming and algorithms with an object-oriented language. Topics include input/output, flow of control, functions, and an introduction to software engineering. Programming assignments are required.

**Requisites**

For information regarding prerequisites for this course, please refer to the Academic Course Catalog (https://catalog.liberty.edu/).

## Rationale

This course provides an introduction to basic computer programming concepts using the C++ language. It also provides a foundation for learning additional aspects of C++ and other languages by teaching problem-solving techniques and a design methodology in addition to the specifics of C++.

## Course Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Describe fundamental computer terminology and software development principles.
2. Correctly employ C++ language features for selection.
3. Correctly employ C++ language features for iteration.
4. Correctly employ C++ language features for functions.
5. Correctly employ C++ language features for arrays.
6. Correctly employ C++ language features for structures.
7. To apply a biblical worldview to introductory programming.

## Course Resources

Click on the following link to view the required resource(s) for the term in which you are registered: Liberty University Online Bookstore (https://bncvirtual.com/liberty).

**Additional Materials for Learning**

A. A. APA Style Guide http://ezproxy.liberty.edu/login?url=http://APAStyleCENTRAL.apa.org (http://ezproxy.liberty.edu/login?url=http://APAStyleCENTRAL.apa.org)
   B. Computer with basic audio/video output equipment
   C. Canvas recommended browsers (https://community.canvaslms.com/t5/Canvas-Basics-Guide/What-are-the-browser-and-computer-requirements-for-Canvas/ta-p/66)
   D. Internet access (broadband recommended)
   E. Microsoft Office
   F. Visual Studio Express 2017 (Free download available through Canvas).

# Course Assignments

## Textbook readings and lecture presentations

## Course Requirements Checklist

After reading the Course Syllabus and Student Expectations, the student will complete the related checklist found in the Course Overview.

## Discussions (2)

Discussions are collaborative learning experiences. Therefore, the student is required to create a thread in response to the provided prompt. Each thread must be at least 300 words and demonstrate course-related and biblical knowledge. In addition to the thread, the student is required to reply to at least 2 other classmates' threads. Each reply must be at least 250 words. For each thread and both replies, you must have at least 1 citation in current APA format.

## Programming Assignments (8)

Using Visual Studio Express 2017, the student must complete 8 C++ Programming Assignments that will give him or her an opportunity to demonstrate mastery of the lessons learned during the assigned Module: Week. Because the programming assignments become progressively more challenging, specific assignment points will differ.

## Quizzes (4)

Each quiz will cover the Learn material for the Module: Week in which it is assigned as well as the preceding Module: Week. Each quiz will be open-book/open-notes, contain up to 75 multiple-choice and true/false questions, and have a time limit of 2 hours.

# Course Grading

| | |
|---|---|
| Course Requirements Checklist | 10 |
| Discussions (2 at 25 pts ea) | 50 |
| Programming Assignments (1 at 25 pts ea, 1 at 35 pts ea, 1 at 60 pts ea, 5 at 70 pts ea) | 470 |
| Quizzes (4 at 120 pts ea) | 480 |
| **Total** | 1010 |

# Policies

## Late Assignment Policy

Course Assignments, including discussions, exams, and other graded assignments, should be submitted on time.

If the student is unable to complete an assignment on time, then he or she must contact the instructor immediately by email.

Assignments that are submitted after the due date without prior approval from the instructor will receive the following deductions:

1. Late assignments submitted within one week after the due date will receive up to a 10% deduction.
2. Assignments submitted more than one week and less than 2 weeks late will receive up to a 20% deduction.
3. Assignments submitted two weeks late or after the final date of the course will not be accepted outside of special circumstances (e.g. death in the family, significant personal health issues), which will be reviewed on a case-by-case basis by the instructor.
4. Group projects, including group discussion threads and/or replies, and assignments will not be accepted after the due date outside of special circumstances (e.g. death in the family, significant personal health issues), which will be reviewed on a case-by-case basis by the instructor.

## Disability Assistance

Students with a disability and those with medical conditions associated with pregnancy may contact Liberty University's Online Office of Disability Accommodation Support (ODAS) at LUOODAS@liberty.edu for accommodations. Such accommodations require appropriate documentation of your condition. For more information about ODAS and the accommodations process, including how to request an accommodation, please visit https://www.liberty.edu/online/online-disability-accommodation-support/ (https://www.liberty.edu/online/online-disability-accommodation-support/). Requests for accommodations not related to disabilities or pregnancy must be directed to the Registrar's Office, which generally handles medical needs support.

If you have a complaint related to disability discrimination or an accommodation that was not provided, you may contact ODAS or the Office of Equity and Compliance by phone at (434) 592-4999 or by email at equityandcompliance@liberty.edu. Click to see a full copy of Liberty's Discrimination, Harassment, and Sexual Misconduct Policy (https://www.liberty.edu/media/1226/Liberty_University_Discrimination_Harassment_and_Sexual_Misconduct_Policy.pdf) or the Student Disability Grievance Policy and Procedures (http://www.liberty.edu/media/8021/Disability_Grievance_Procedures.pdf).

## Course Attendance

In an effort to comply with U.S. Department of Education policies, attendance is measured by physical class attendance or any submission of a required assignment within the enrollment dates of the course (such as examinations, written papers or projects, any discussion posts, etc.) or initiating any communication with one's professor regarding an academic subject. More information regarding the attendance policy (https://nam04.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwiki.os.liberty.edu%2Fdisplay%2FIE%2FOnline%2BAttendance%2Band%2BNon-Attendance&data=02%7C01%7Caccollins2%40liberty.edu%7Cd91431fa6ac547056b5408d833029e1a%7Cbaf8218eb3024465a9934a39c97251b2%7C0%7C0%7C637315433613719138&sdata=%2BNBTsPOoXuHAPLflSQRugK7cRSuV6UyC7qD3agf3l2k%3D&reserved=0) can be found in the Academic Course Catalogs (https://nam04.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.liberty.edu%2Findex.cfm%3FPID%3D791&data=02%7C01%7Caccollins2%40liberty.edu%7Cd91431fa6ac547056b5408d833029e1a%7Cbaf8218eb3024465a9934a39c97251b2%7C0%7C0%7C637315433613729132&sdata=DjjhMiRBhnF%2B2ZJUC8eBd1OdNb26S9ADukODYsilXlA%3D&reserved=0). Regular attendance in online courses is expected throughout the length of the term. Students who do not attend within the first week of a sub-term by submitting a required academic assignment (such as the Course Requirements Checklist, an examination, written paper or project, discussion post, or other academic activity) will be dropped from the course. Students who wish to re-engage in the course are encouraged to contact Academic Advising to discuss their enrollment options. Students who begin an online course, but at some point in the semester cease attending, and do not provide official notification to withdraw, will be assigned a grade of "FN" (Failure for Non-Attendance (https://nam04.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwiki.os.liberty.edu%2Fdisplay%2FIE%2FUnofficial%2BWithdrawals&data=02%7C01%7Caccollins2%40liberty.edu%7Cd91431fa6ac547056b5408d833029e1a%7Cbaf8218eb3024465a9934a39c97251b2%7C0%7C0%7C637315433613729132&sdata=MoMvZdPfza69InuhVHMHAVgu59ZP0Fw45xJTu9PIBrU%3D&reserved=0)). Students wishing to withdraw from courses after the official start date should familiarize themselves with the withdrawal policy.

## Grading Scale

| A | B | C | D | F |
|---|---|---|---|---|
| 900-1010 | 800-899 | 700-799 | 600-699 | 0-599 |

For courses with a Pass/NP final grade, please refer to the Course Grading section of this syllabus for the assignment requirements and/or point value required to earn a Passing final grade.

## Add/Drop Policy

The full policy statement and procedures are published in the Policy Directory (https://wiki.os.liberty.edu/display/IE/Dropping+and+Adding+Online+Classes).

## Honor Code

Liberty University comprises a network of students, Alumni, faculty, staff and supporters that together form a Christian community based upon the truth of the Bible. This truth defines our foundational principles, from our Doctrinal Statement to the Code of Honor. These principles irrevocably align Liberty University's operational procedures with the long tradition of university culture, which remains distinctively Christian, designed to preserve and advance truth. Our desire is to create a safe, comfortable environment within our community of learning, and we extend our academic and spiritual resources to all of our students with the goal of fostering academic maturity, spiritual growth and character development.

Communities are predicated on shared values and goals. The Code of Honor, an expression of the values from which our Doctrinal Statement was born, defines the fundamental principles by which our community exists. At the core of this code lie two essential concepts: a belief in the significance of all individuals, and a reliance on the existence of objective truth.

While we acknowledge that some may disagree with various elements of the Code of Honor, we maintain the expectation that our students will commit to respect and uphold the Code while enrolled at Liberty University.

Adherence to the principles and concepts established within facilitates the success of our students and strengthens the Liberty community.

The Code of Honor can be viewed in its entirety at http://www.liberty.edu/index.cfm?PID=19155 (http://www.liberty.edu/index.cfm?PID=19155).

# Schedule

| When | Topic | Notes |
|---|---|---|
| **Course Overview** | Student Acknowledgements | Course Requirements Checklist |
| | Technology Integration Set-Up | Prepare: Cengage MindTap |
| **Module 1: Week 1** | Learn | Read: 4 items<br>Watch: 4 items<br>Explore: 2 items |
| | Apply | Programming: HelloWorld Assignment<br>Discussion: Compare God's Creation to Programmers and Programming |
| **Module 2: Week 2** | Learn | Read: 2 items<br>Watch: 2 items<br>Explore: 1 item |
| | Apply | Programming: Permutations Assignment<br>Quiz: Basic Elements and I/O |

| When | Topic | Notes |
| --- | --- | --- |
| **Module 3: Week 3** | Learn | Read: 2 items<br>Watch: 2 items<br>Explore: 1 item |
| | Apply | Programming: If Loops & Input From Data File Assignment |
| **Module 4: Week 4** | Learn | Read: 2 items<br>Watch: 2 items<br>Explore: 1 item |
| | Apply | Programming: While Loops Assignment<br>Quiz: Control Structures |
| **Module 5: Week 5** | Learn | Read: 3 items<br>Watch: 1 item<br>Interact: 1 item |
| | Apply | Programming: User-Defined Functions Assignment |
| **Module 6: Week 6** | Learn | Read: 3 items<br>Watch: 1 item<br>Interact: 1 item |
| | Apply | Programming: User-Defined Data Types Assignment<br>Quiz: User-Defined Functions and Data Types |
| **Module 7: Week 7** | Learn | Read: 3 items<br>Watch: 1 item<br>Interact: 1 item |
| | Apply | Programming: Simple Arrays Assignment<br>Discussion: Abstraction with God and in Programming |
| **Module 8: Week 8** | Learn | Read: 3 items<br>Watch: 1 item<br>Interact: 1 item |
| | Apply | Programming: Multi-Array Assignment<br>Quiz: Functions and Arrays |