PSU Computer Science
Credit for Prior Learning (CPL)

While we believe attending classes is the most efficient way to master the material you will be expected to know when you are admitted to the upper division Computer Science program, we recognize that students may have picked up substantially the same knowledge through prior life experiences, self-study, etc. Because of this, we offer Credit for Prior Learning (CPL) for any of our required lower division Computer Science courses (CS162, CS163, CS201, CS202, CS250, and CS251).

CS 162: Introduction to Computer Science

- **Credits**: 4
- **Prerequisites**: Prior programming experience equivalent to CS161.
- **Type of CPL**: Exam
- **Course Description**: The goals of this class are to teach the syntax of C++ to students who already know how to program. Students are expected to be proficient at using conditionals, I/O, loops, and functions with arguments. Topics include: conditionals, I/O, files, functions, classes, pointers, dynamic memory, linear linked lists, and multi-dimensional arrays in C++, as well as program correctness, verification, and testing. Three hours lecture and one 3-hour laboratory. The laboratory emphasizes practical programming skills.

CS 163: Data Structures

- **Credits**: 4
- **Prerequisites**: CS 162 with a grade of C or better.
- **Type of CPL**: Exam
- **Course Description**: Data abstraction with formal specification. Elementary algorithm analysis. Basic concepts of data and its representation inside a computer. Linear, linked, and orthogonal lists; tree structures. Data structures are implemented as data abstractions using pointer based implementations. Sorting and search strategies. Data management. Three hours lecture and one 3-hour laboratory. The laboratory emphasizes practical programming skills.

CS 201: Computer Systems Programming

- **Credits**: 4
- **Prerequisites**: CS 162
- **Type of CPL**: Exam
- **Course Description**: Introduction to computer systems from a software perspective. Topics include: Basic machine organization, System programming using C and assembly
language, Introduction to system programming tools (gcc, makefile, gdb), Data representation (bits & bytes, characters, integers, floating point numbers, Implementation of control flow, procedure calls, and complex data types at machine level. Linking and loading, Exceptions and interrupts, Process control and signals, System calls, File I/O, Timing and improving program performance, Introduction to memory hierarchy, dynamic memory allocation techniques

**CS 202: Programming Systems**

- **Credits:** 4
- **Prerequisites:** CS 163
- **Type of CPL:** Exam
- **Course Description:** Students will become familiar with the language and operating system environment used in most upper division courses in the Computer Science major curriculum. Use of the file system, operating-system calls, and shell-level programming; low-level debugging of high-level programs. Programming exercises will include applications from data structures (e.g. B-trees) and memory management techniques.

**CS 250: Discrete Structures I**

- **Credits:** 4
- **Expected Preparation:** MTH 251
- **Type of CPL:** Exam

**CS 251: Discrete Structures II**

- **Credits:** 4
- **Prerequisites:** CS 250
- **Type of CPL:** Exam
- **Course Description:** Continuation of CS 250. Logic: propositional calculus, first-order predicate calculus. Formal reasoning: natural deduction, resolution. Applications to program correctness and automatic reasoning. Introduction to algebraic structures in computing.

Remember, CPL is intended for students that have already mastered the material. It is not intended as a self-paced, off-campus alternative to taking the class. Teaching materials and resources, office hours, access to D2L, etc. will not be available.
CPL is only offered during terms the corresponding course is offered:

- CS162: Offered Fall, Winter, Spring and Summer
- CS163: Offered Fall, Winter, and Spring
- CS201: Offered Fall, Winter, and Spring
- CS202: Offered Winter, Spring and Summer
- CS250: Offered Fall, and Winter
- CS251: Offered Winter and Spring

In order to take a class via CPL, you must begin the process the term before you intend to attempt the class.

**CS162, CS163 and CS202**

Sign up for a technical interview 2 weeks before the finals week of the term prior to the term you wish to attempt CPL: [https://cs_technical_interview.youcanbook.me/](https://cs_technical_interview.youcanbook.me/)

At the technical interview, you will be advised if you should attempt CPL. If you are advised to attempt CPL, complete the CPL form: [http://www.pdx.edu/credit-for-prior-learning/sites/www.pdx.edu.credit-for-prior-learning/files/Credit_for_Prior_Learning.pdf](http://www.pdx.edu/credit-for-prior-learning/sites/www.pdx.edu.credit-for-prior-learning/files/Credit_for_Prior_Learning.pdf), pay the CPL and testing fee at the Cashier’s Office and return the completed form with the PAID stamp from the Cashier’s Office to the Undergraduate Advisor before the start of finals week the term before you intend to take the course by CPL. You will be given a self-study guide to the Proficiency Demonstration process and scheduled to take the Final Proficiency Demonstration during finals week of the term prior to the term you wish to attempt CPL.

If you do not pass the Proficiency Demo, you will have failed your attempt at CPL and must take the course. If you pass the Proficiency Demo, you will be assigned a project to complete by the end of the following term.

During the term you attempt CPL, you will also be required to successfully complete the midterm Proficiency Demo and pass the Final Exam. These activities will be taken alongside the students taking the course that term.

**An Example**

Assume a student wishes to attempt CS163 via CPL in the Fall:

1. The student will schedule a technical interview two weeks before Finals Week the preceding Summer. If after the Technical Interview we believe there would be some value in attempting CS163 via CPL, the student will be invited to complete the CPL form and pay the CPL fee at the Cashier’s Office. If we don’t believe that the student is qualified to attempt CS163 via CPL, we will instead recommend that they take the class.
2. The student gives the undergraduate advisor the stamped CPL form. The undergraduate advisor gives the student a Proficiency Demo self-study guide and schedules a time for them to take the CS163 Final Proficiency Demo during Summer Finals week.
3. If the student passes the Proficiency Demo, they will be given a CS163 project to complete. This will be due during Fall Finals Week. If the student does not pass the CS163 Proficiency Demo, they will receive an NP (No Pass) for the CPL attempt.
4. In addition to passing the CS163 Final Proficiency Demo in the Summer, the student will be expected to take and pass the midterm Proficiency Demo and the Final Exam with the rest of the CS163 class in the Fall.

**CS201, CS250 and CS251**

Make sure you check to see which term(s) the class you wish to attempt by CPL is offered. Bring the stamped CPL Form to the Undergraduate Advisor before Finals Week of the term immediately preceding the term you wish to attempt CPL. For instance, if you wish to attempt CS250 by CPL in Winter, you’ll need to bring the stamped CPL form to the Undergraduate Advisor before Fall Finals Week.