CSE 240 Introduction to Programming Languages

ASU School of Computing and Augmented Intelligence

Fall 2024

Syllabus and Course Information

Instructor

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Course Description

Introduces procedural (C), object-oriented (C++), functional (Scheme) and logic (Prolog) programming languages.

Prerequisite(s): ACO 102 with C or better OR **CSE 205 with C or better** OR GIS major with GIS 222 with C or better OR Software Engineering graduate student; Credit is allowed for only ACO 240 or CSE 240 OR Visiting University Student.

Grading (See ASU grading policies at: https://students.asu.edu/grades)

Midterm Exam	20%
Final Exam	25%
Weekly Assignments	40%
Weekly Quizzes	15%

Course Materials

Textbook (not required; see note below on purchasing)

Introduction to Programming Languages: Programming in C, C++, Scheme, Prolog, C# and Python, Y. Chen, Kendall Hunt Publishing, 6th edition 2019. ISBN 9781792411762.

Reference books

The C Programming Language, B. Kernighan and D. Ritchie, Pearson, 2nd edition, March 22, 1988.
The C++ Programming Language, B. Stroustrup, Addison-Wesley Professional, 4th edition, May 9, 2013.
C++: How to Program, Harvey and Paul Deitel, Prentice-Hall, 10th edition, February 29, 2016.
Effective Modern C++, Scott Meyers, O'Reilly Media, Incorporated; 1st edition, December 5, 2014.
The Scheme Programming Language, R. Kent Dybvig, MIT Press, fourth edition, July 31, 2009.
Clause and Effect: Prolog Programming for the Working Programmer, W. Clocksin, Springer, 1997.

Learning Outcomes

After completing this course, students should *understand and be familiar with*:
1. programming paradigms as a way of classifying programming languages according to their features,
2. imperative programming paradigms such as procedural and object-oriented programming,
3. declarative programming paradigms such as functional and logic programming.

Also, students should *be able to* design and implement computer programs in:
1. a procedural programming language such as C,
2. an object-oriented programming language such as C++,
3. a functional programming language such as Scheme,
4. a logic programming language such as Prolog.

Schedule (may be subject to change)

August 22 - December 6, 2024

	Monday			Wednesday			
1	A26	M1	Programming Paradigms	A28	M1	Program Structure	A1
2	S2	no class		S4	M1	Compilers, Interpreters	A2
3	S9	M2	C Programming	S11	M2	C Data Types, Arrays	A3
4	S16	M2	C Pointers	S18	M2	C Pointers, Arrays, Strings	A4
5	S23	M2	C typedef, enum, struct	S25	M2	C File I/O	A5
6	S30	M2	C Linked Lists	O2	M2	Recursion	A6
7	O7	M2	C++ OOP	O9	M3	C++ OOP, Inheritance	A7
8	O14	no class		O16	**Midterm Exam**		A8
9	O21	M3	C++ Polymorphism	O23	M3	C++ Polymorphism	A9
10	O28	M3	C++ STL	O30	M3	C++ File I/O, Exceptions	A10
11	N4	M4	Scheme Introduction	N6	M4	Scheme Procedures	A11
12	N11	no class		N13	M4	Scheme Recursion	A12
13	N18	M5	Prolog Introduction	N20	M5	Prolog Built-in Operations	A13
14	N25	M5	Prolog Parameters, Recursion	N27	M5	Prolog Pairs and Lists	A14
15	D2	M5	Prolog Flow Control, Cut	D4	Review		

C

C++

Scheme

Prolog

Final Exam (https://students.asu.edu/final-exam-schedule)
79307 Monday, December 9, 12:30 - 1:30 PM

Purchasing the Textbook

The textbook will be provided as an e-book at a discounted price. To take advantage of this discounted price, no action is needed. Following the drop/add period, a charge of $127.75, plus tax, will post to your student account under the header “Digital Integrated Course Mtrl” and access will continue uninterrupted.

If you would rather purchase the material from an alternate source, you may choose to **opt out** of the program by using this link: https://includedcp.follett.com/1230*. Enter your ASU e-mail address AS IT APPEARS IN THE ASU DIRECTORY (http://asu.edu/directory), then follow the instructions provided. Be aware that if you do opt-out, your access to the e-book will be discontinued.

TO ACCESS THE E-BOOK, CLICK ON THE BRYTEWAVE TOOL IN YOUR COURSE’S CANVAS SHELL. Please note: the ebook won’t appear on your shelf until approximately 5 days prior to the start of classes. If you need assistance accessing the book or the opt-out portal, fill out the support request form: https://forms.gle/uD4GhBxMoixnbwYx5

Course Policies

Absence Policy

- **Exams must be taken in-person on the dates in the syllabus.** Only in extreme cases, with documentation provided by the school, will alternate exams be considered.
- Missing a graded activity will result in zero credit.
- Grade appeals must be done in writing within seven days of the date of the published grade.
- No extra credit activities are available to individual students.

Excused absences for classes will be given without penalty to the grade in the case of (1) a university-sanctioned event; (2) religious holidays; a list of religious holidays can be found here: https://eoss.asu.edu/cora/holidays; (3) work performed in the line-of-duty. Students who request an excused absence must follow the policy/procedure guidelines. Excused absences do not relieve students of responsibility for any part of the course work required during the period of absence.

Academic Integrity

All engineering students are expected to adhere to the ASU Student Honor Code and the ASU academic integrity policy, which can be found at https://provost.asu.edu/academic-integrity/policy. Students are responsible for reviewing this policy and understanding each of the areas in which academic dishonesty can occur. If you have taken this course before, you may not reuse or submit any part of your previous assignments without the express written permission from the instructor.
All student academic integrity violations are reported to the Fulton Schools of Engineering Academic Integrity Office (AIO). Withdrawing from this course will not absolve you of responsibility for an academic integrity violation and any sanctions that are applied. The AIO maintains a record of all violations and has access to academic integrity violations committed in all other ASU college/schools.

Policy Regarding Expected Student Behavior

Students are expected to acknowledge and embrace the FSE student professionalism expectation located at: https://engineering.asu.edu/professionalism/
Students should be familiar with the Student Services Manual (SSM) (https://policy.asu.edu).
According to SSM104-02, all incidents and allegations of violent or threatening conduct by ASU students (on or off-campus) must be reported to the ASU Police Department (ASU PD) and the Office of the Dean of Students.

Harassment and Sexual Discrimination

Arizona State University is committed to providing an environment free of discrimination, harassment, or retaliation for the entire university community, including all students, faculty members, staff employees, and guests. ASU expressly prohibits discrimination, harassment, and retaliation by employees, students, contractors, or agents of the university based on any protected status: race, color, religion, sex, national origin, age, disability, veteran status, sexual orientation, gender identity, and genetic information.
Title IX is a federal law that provides that no person be excluded on the basis of sex from participation in, be denied benefits of, or be subjected to discrimination under any education program or activity. Both Title IX and university policy make clear that sexual violence and harassment based on sex is prohibited. An individual who believes they have been subjected to sexual violence or harassed on the basis of sex can seek support, including counseling and academic support, from the university. If you or someone you know has been harassed on the basis of sex or sexually assaulted, you can find information and resources at https://sexualviolenceprevention.asu.edu/faqs.
As a mandated reporter, I am obligated to report any information I become aware of regarding alleged acts of sexual discrimination, including sexual violence and dating violence. ASU Counseling Services, https://eoss.asu.edu/counseling is available if you wish to discuss any concerns confidentially and privately. ASU online students may access 360 Life Services, https://goto.asuonline.asu.edu/success/online-resources.html.

Students With Disabilities

Suitable accommodations are made for students having disabilities. Students needing accommodation must register with the ASU Student Accessibility and Inclusive Learning Services office and provide documentation of that registration to the instructor. Students should communicate the need for an accommodation in enough time for it to be properly arranged. See: https://www.asu.edu/aad/manuals/acd/acd304-08.html, Classroom and Testing Accommodations for Students with Disabilities.