

## Course Description

**Instructor:** Prof. Richard Chang <chang@umbc.edu>

Office Hours: Tue & Thu 12:30pm – 1:30pm (in person [ITE 326](#))

**Teaching Assistant:** Dharani Nadendla <dharann1@umbc.edu>

Office Hours: TBA

**Course Web Page:** <http://umbc.edu/~chang/cs331>

**Time & Place.** Tue & Thu 2:30pm – 3:45pm, Sondheim 208

### Textbooks.

*Programming Languages: Principles and Practice*, third edition,  
Kenneth C. Louden and Kenneth A. Lambert. Cengage Learning, 2012 (ISBN: 9781111529413)

*Programming in Haskell*, 2nd edition, Graham Hutton.  
Cambridge University Press, 2016 (ISBN: 9781316626221)

**Prerequisites.** Students enrolled in this class must have completed CMSC 202 Computer Science II and CMSC 203 Discrete Structures with a grade of C or higher.

**Objectives.** The key learning objectives for this course are:

- To understand how programming languages have evolved and continue to evolve
- To learn about formal definition and specification of programming languages
- To learn about different programming paradigms, and gain some experience in several
- To study how programming languages are implemented

**Grading.** Grades will be based upon the following distribution

|                                |     |
|--------------------------------|-----|
| Reading & Lecture Quizzes (12) | 6%  |
| Homework (10)                  | 30% |
| Midterm Exams (2)              | 40% |
| Final Exam                     | 24% |

The schedule as planned has 10 homework assignments and 12 reading & lecture quizzes. However, if a homework assignment or quiz is canceled and not made up, the weight of each category will remain the same. For example, if one homework assignment is canceled, the remaining 9 assignments would still be 30% of your final grade — each homework assignment would be worth 3.33% instead of 3.00%.

The final letter grade is based on the standard formula:

$$0 \leq F < 60, \quad 60 \leq D < 70, \quad 70 \leq C < 80, \quad 80 \leq B < 90, \quad 90 \leq A \leq 100$$

Grades will not be "curved" — that is, the percentages of A's, B's and C's are not fixed. However, depending upon the distribution of grades in the class, there may be adjustments in the students' favor, but under no circumstances will the letter grades be lower than in the standard formula.

Grades are given for work done *during* the semester; incomplete grades will only be given for medical illness or other such dire circumstances. In particular, taking a heavy course load is not a legitimate reason for requesting an incomplete.

**Required Reading & Lectures.** This is an in-person class. Your attendance is expected. Lectures will present topics that supplement the textbook reading. You will be responsible for the lecture content for homework and exams.

**Reading and Lecture Quizzes.** Each week you must complete an online quiz with questions selected from the prior week's reading and lecture. You have only one attempt to complete the quiz. Quizzes will be posted on Friday and must be completed by 11:59pm of the following Tuesday. There will be a total of 12 Reading and Lecture Quizzes. (No quiz will be posted on the Friday after Midterm Exam 1, Midterm Exam 2 and Thanksgiving.) The first quiz will be due on Tuesday, September 1.

**Exams.** There are two midterm exams (Oct 8, Nov 12) and the final exam (? Dec 15). See class schedule. Exams must be taken in-person. Exam topics will be chosen from the required reading, lectures and homework assignments. *You are responsible for the material in the assigned reading in the textbooks, even if it is not covered in lecture. You are responsible for the material covered in lecture, even if it is not presented in the slides.*

**Homework.** Written work will be submitted online in PDF. You can prepare your written work electronically or scan in handwritten sheets. If you scan in your work, please make sure that you use a good scanning app that corrects the lighting and keystoneing. Both the Apple App Store and the Google Play Store have many good inexpensive scanning apps.

Programming assignments will be submitted on GL.

A significant portion of your grade for programming assignments (up to 40%) will depend on *good usage* of designated programming language features. Thus, a program that produces the correct output might still receive a very low grade if it does not demonstrate good usage of the designated features.

*You are responsible for learning* from these homework assignments. You will be required to solve similar problems on exams *without assistance* from the professor, from the TA, from your classmates, from the internet or from AI. Students who receive too much assistance while completing the homework assignments might not fare well in the exams and *not pass the course*.

**Late Homework.** Homework assignments are due by 11:59pm on Thursdays. Unexcused late homework will be penalized as follows:

|                                   |       |
|-----------------------------------|-------|
| 1 day late (by Friday 11:59pm)    | -5%   |
| 2 days late (by Saturday 11:59pm) | -10%  |
| 3 days late (by Sunday 11:59pm)   | -20%  |
| 4 days late (by Monday 11:59pm)   | -40%  |
| 5 days late (by Tuesday 11:59pm)  | -100% |

Late homework will not be accepted after 5 days.

Three times during the semester, you will be allowed to submit a late homework assignment without excuse and without penalty one lecture late (e.g., homework due on Thursday may be submitted on

Tuesday without penalty). One full-credit unexcused late assignment will be accepted for Homework 1-4, one for Homework 5-7 and another for Homework 8-10. You do not accrue any passes for submitting homework assignments on time. For example, if you submitted all of Homework 1-7 on time, you can still only turn in one of Homework 8-10 late for full credit.

**Homework Policy.** You are allowed to discuss the homework assignments including the programming portions with other students verbally. However, you should *never* look at another student's code. Homework should be written up *independently*. In cases of copying, the minimum penalty for all students involved is a reduction of the grade for the entire homework assignment to zero. *All cases of academic misconduct will be reported to the UMBC Academic Conduct Committee.* This is not a threat, it is simply a matter of procedure.

The UMBC academic integrity policy is available at:

<<https://tinyurl.com/yd26tx2d>>

**University Policies and Resources.** UMBC Policies on Accessibility & Disability Accommodations; Sexual Assault, Sexual Harassment, Gender Based Violence & Discrimination; Pregnancy and Parenting; Religious Observances & Accommodations; and Hate, Bias Discrimination & Harassment are described at the [Office of Equity & Inclusion's website](#).

## Fall 2026 CMSC 331-01 Principles of Programming Languages, Class Schedule

|    | PL Topics         | Louden & Lambert                      | Haskell Topics | Hutton                      | HW Assign        | HW Due |
|----|-------------------|---------------------------------------|----------------|-----------------------------|------------------|--------|
| 1  | <b>Tue Aug 25</b> | Introduction + History of PL          | 1.1 - 1.6      |                             |                  |        |
| 2  | <b>Thu Aug 27</b> | PL Design Criteria                    | 2.1-2.7        | Intro to Haskell            | 1.1-1.4, 2.1-2.5 | HW1    |
| 3  | <b>Tue Sep 01</b> | Functional Programming                | 3.1-3.6        | Lists, tuples and functions | 3.1-3.9          |        |
| 4  | <b>Thu Sep 03</b> | Logic Programming                     | 4.1-4.5        | Haskell functions           | 4.1-4.3          | HW2    |
| 5  | <b>Tue Sep 08</b> | More Logic Programming                |                | Haskell functions           | 4.4-4.6          |        |
| 6  | <b>Thu Sep 10</b> | Object-oriented Programming           | 5.1-5.6        | List comprehensions         | 5.1-5.6          | HW3    |
| 7  | <b>Tue Sep 15</b> | Regular Expressions, PCRE & DFAs      | 6.1            | Recursion                   | 6.1-6.2          |        |
| 8  | <b>Thu Sep 17</b> | Context-Free Grammars                 | 6.2            | Recursion                   | 6.3-6.6          | HW4    |
| 9  | <b>Tue Sep 22</b> | Parsing Techniques                    | 6.3-6.7        | Higher-order functions      | 7.1-7.7          |        |
| 10 | <b>Thu Sep 24</b> | Parsing Techniques                    |                | Types and classes           | 8.1-8.3          | HW5    |
| 11 | <b>Tue Sep 29</b> | Parsing Techniques                    |                | Types and classes           | 8.4-8.6          |        |
| 12 | <b>Thu Oct 01</b> | Automata Theory                       |                |                             |                  | HW5    |
| 13 | <b>Tue Oct 06</b> | Midterm 1 Review                      |                |                             |                  |        |
| 14 | <b>Thu Oct 08</b> | <b>Midterm Exam 1</b>                 |                |                             |                  |        |
|    | <b>Tue Oct 13</b> | <b>Fall Break</b>                     |                |                             |                  |        |
| 15 | <b>Thu Oct 15</b> | Control I: Expressions & Statements   | 9.1-9.5        | Haskell Input & Output      | 10.1-10.5        | HW6    |
| 16 | <b>Tue Oct 20</b> | Control II: Procedures & Environments | 10.1-10.6      | Haskell Input & Output      | 10.1-10.5        |        |
| 17 | <b>Thu Oct 22</b> | Stack Frames & Higher-order functions | 10.1-10.6      | Monads                      | 12.1 - 12.3      | HW7    |
| 18 | <b>Tue Oct 27</b> | Upwards Funarg                        |                | Monads                      |                  |        |
| 19 | <b>Thu Oct 29</b> | Lambda Calculus                       |                | Monads                      |                  | HW8    |
| 20 | <b>Tue Nov 03</b> | Semantics Intro, Attribute Grammars   |                |                             |                  |        |
| 21 | <b>Thu Nov 05</b> | Basic Semantics: Binding & Scope      | 7.1-7.8        |                             |                  | HW9    |
| 22 | <b>Tue Nov 10</b> | Midterm 2 Review                      |                |                             |                  |        |
| 23 | <b>Thu Nov 12</b> | <b>Midterm Exam 2</b>                 |                |                             |                  |        |
| 24 | <b>Tue Nov 17</b> | Formal Semantics                      | 12.1-12.5      |                             |                  |        |
| 25 | <b>Thu Nov 19</b> | Data Types                            | 8.1-8.10       |                             |                  | HW10   |
| 26 | <b>Tue Nov 24</b> | Abstract Data Types & Modules         | 11.1-11.8      |                             |                  |        |
|    | <b>Thu Nov 26</b> | <b>Thanksgiving Break</b>             |                |                             |                  |        |
| 27 | <b>Tue Dec 01</b> | Parallel Programming                  | 13.1-13.3      |                             |                  |        |
| 28 | <b>Thu Dec 03</b> | TBD                                   |                |                             |                  | HW10   |
| 29 | <b>Tue Dec 08</b> | Final Exam Review                     |                |                             |                  |        |
|    | <b>Thu Dec 17</b> | <b>1:00pm - 3:00pm Final Exam</b>     |                |                             |                  |        |