

Course Syllabus

CS 242 Programming Languages

PREREQUISITE: CS 241 and MATH 225

COURSE DESCRIPTION: Concepts and implementation of programming languages, comparative study of programming languages, analyzing their suitability for various applications.

COURSE OBJECTIVES:

This course will extend and deepen your knowledge, understanding, and ability to program in many languages and to program in general. You are expected to understand and have retained knowledge of topics previously covered in CS 241 and its prerequisites. Specifically the objectives of this course are:

- Understand the principles behind the design of programming languages;
- See how those principles are put into practice in real programming languages;
- Understand the underlying implementation of programming constructs across many languages, especially for C++ in detail.

INSTRUCTOR:

Name: Dr. Changwon Yoo
Office: Social Sciences 412
Office Hours: Tues & Thus 11am-12:30pm or by appointment
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Phone: 406-243-5605

TA:

Name:
Office:
Office Hours:
E-mail address:

TOPICS:

1. Background of programming and programming languages.
2. Language description and compiler implementation.
3. Language features and implementation.
4. Subprograms: specification and implementation.
5. Abstract data types and encapsulation.
6. Object-oriented constructs.
7. Exception handling.
8. C/C++ Programming.

TEXTS:

Concepts of Programming Languages, Sebesta 8ed.

Thinking in C++, Volume One: Introduction to Standard C++, Bruce Eckel (Prentice Hall)

– Also available online at: <http://www.mindview.net/Books/TICPP/ThinkingInCPP2e.html>

Evaluation and assessment:

Assignments:

Readings as assigned with the homework.
Homework exercises and programming assignments.
Posted on Blackboard and submission will be accepted through digital dropbox.

In Class Exams:

Two midterm exams.
A final examination.

GRADING:

Exams:	60%
Assignments:	40%

Late assignments will be penalized 25% per day. Assignments that are more than 3 days late will get no credit.

Meetings (2008):

Lectures:

Tues/Thurs 12:40 pm - 2:00 pm (LA 106)

Labs:

Mons /Weds TBA

Location: CS419 fish bowl, in front of SS402

You need to have an account on the CS network (the physical machine that we will use is ss419.cs.umt.edu). If you do not have an account, please see Erik at SS401 to get an account.

CHEATING:

The CS Department will not tolerate cheating or plagiarism. We do not want students who engage in these practices in our program, and when there is clear evidence of cheating or plagiarism, the department will recommend suspension or expulsion of the student through the procedures specified in the Student Conduct Code.

Tentative Schedule*:

Week	Tuesday	Thursday	Optional/ Additional	Lab**
1 Jan 22	Introduction, Syllabus, Course Information, Chapter 1 Sebesta	Chapter 1 Sebesta, First assignment	Chapter 2 Sebesta – Classic languages	Chapter 2 Eckel
2 Jan 29	Chapter 3 – Syntax	Chapter 3 – Syntax	Chapter 2 Sebesta – Classic languages Chapter 3 - Semantics	Chapter 2 Eckel
3 Feb 5	Chapter 3 – Semantics Assignment 1 due	Chapter 4 – Analysis		Chapter 3 Eckel
4 Feb 12	Chapter 5 – Names and Scope	Chapter 5 – Names and Scope Test 1 – Chapters 1 - 4	Review for Test 1	Chapter 10 Eckel
5 Feb 19	Chapter 6 – Data types	Chapter 6 – Data types	Review the test	Chapter 11 Eckel
6 Feb 26	Chapter 7 – Expressions Assignment 2 due	Chapter 7 – Expressions		Chapter 12 Eckel
7 Mar 4	Chapter 8 – Control Structures	Chapter 8 – Control Structures		Chapter 3 Eckel
8 Mar 11	Chapter 8; Review for Test 2	Chapter 8 – Control Structures	Review Test Chapter 9 Subprograms Chapter 10 – Implementing Subprograms	Chapter 3 Eckel
9 Mar 18	Chapter 8 – Control Structures Assignment 3A due	Test 2 – Chapters 1 – 8	Chapter 9 Subprograms Chapter 10 – Implementing Subprograms Chapter 11 – Abstract Data Types	Chapter 1 Eckel
10 Mar 25	Spring Break			
11 April 1	Chapter 9 – Subprograms	Chapter 10 – Implementing Subprograms Assignment 3B due	Chapter 11 – Abstract Data Types	Chapter 7 Eckel
12 April 8	Chapter 10 – Implementing Subprograms	Chapter 11 – Abstract Data Types	Chapter 12 – OO Programming	Chapter 4 Eckel
13 April 15	Chapter 12 – OO Programming	Chapter 12 – OO Programming Assignment 4 due		Chapter 14 Eckel
14 April 22	Chapter 13 – Concurrency	Chapter 14 – Event Handling	Chapter 12 – OO Programming	Chapter 14 Eckel
15 April 29	Chapter 14 – Event Handling	Chapter 14 – Exception Handling Assignment 5 due		Chapter 4 Eckel
16 May 6	Final Exam : TBA			

* This is a tentative schedule. This schedule is subject to change.

** Each lab session will cover several additional chapters from Eckel's book.