Course Syllabi

1. *Course number and name*
   COSC 4377 Compiler Techniques

2. *Credits and contact hours*
   3 Credit Hours

3. *Instructor's or course coordinator's name*
   Instructor: Leonard Brown

4. *Textbook, title, author, and year*
   Introduction to Compiler Design, 3rd edition, Torben Ægidius Mogensen, Springer, 2024, ISBN 9783031464591.

5. *Specific course information*
   a. *A brief description of the content of the course (catalog description)*
      Characteristics of the compiling process, syntax directed compiling, symbol table construction and searching, top-down and bottom-up methods, formal grammars, and a formalization of syntax

   b. *Prerequisites or co-requisites*
      COSC 2315 – Computer Organization and COSC 2336 – Data Structures & Algorithms

   c. *Indicate whether a required, elective, or selected elective course in the program*
      Elective course for Computer Science

6. *Specific goals of the course*
   a. *Specific outcomes of instruction, ex. The student will be able to explain the significance of current research about a particular topic.*
      1. Compare and contrast compiled and interpreted execution models, outlining relative merits of each.
      2. Describe the phases of program translation from source code to executable code and the files produced by these phases.
      3. Explain the differences between machine-dependent and machine-independent translation and where these differences are evident in the translation process.

4. Describe the steps and algorithms used by language translators: lexical analysis; top-down parsing; bottom-up parsing; intermediate code generation; code optimization; and object code generation.
5. Recognize the underlying formal models such as finite state automata and their connection to language definition through regular expressions and grammars.
6. Discuss the effectiveness of optimization.
7. Explain the impact of a separate compilation facility and the existence of program libraries on the compilation process.

7. *Brief list of topics to be covered*
    - Introduction to Compilation
    - Lexical Analysis
    - Syntactic Analysis
    - Top-Down Parsing
    - Bottom-Up Parsing
    - Intermediate Code Generation
    - Code Optimization
    - Object Code Generation
    - Memory Use

COSC 4377 Compiler Techniques – Fall 2026

General Information

Instructor	Leonard Brown
Office Location	Soules 315.01
Office Hours	Tu/Th 10:00am – 12:00pm, 2:00pm – 3:00pm W 10:00am – 2:00pm (or by appointment)
Phone	(903) 566-7403
Email	lbrown@uttyler.edu
Class Time/Location	TR 12:30pm – 1:50 pm / Soules 211

Exams: There will be two midterm exams and one final exam given for this class. All exams will be held in the class lecture room. The midterm exams will be during the regular class time. The ***tentative*** dates of the exams are:

Exam I	October 15, 2026
Exam II	November 19, 2026
Final Exam	**(See University Schedule)**

You will be notified in advance of any change in the above dates.

Grading: There are several components to the course grade totaling 1000 points. The point distribution is as follows:

Exam I	150 points
Exam II	150 points
Homework Assignments/Quizzes	400 points
Final Examination	300 points

Course grades will be assigned based on the following scale.

900-1000	A
800-899	B
700-799	C
600-699	D
599 and below	F

Late Policies: All homework assignments are due at 11:59 p.m. on the date specified in the assignment. Assignments submitted after the due date (even if it is by one minute) are considered late. There is a 10% penalty for late assignments. Assignments will not be accepted after 48 hours.

Plagiarism: Unless otherwise specified, all work submitted for a grade must be completed by yourself. You are not to submit another person's work and claim it as your own. Plagiarism will result in disciplinary actions. To spare yourself accusations of plagiarism-

1. Do not show another student a copy of your work before it has been graded. The penalties for permitting your work to be copied are the same as the penalties for copying someone else's work.
2. Do not leave printouts of your work where other students may pick them up.

Additional Policies: Syllabus Information

Academic Calendar Academic Calendar 2026-2027

Final Exam Schedule Final Exam Schedule