444 Compilers — Syllabus — Siska — 2018 Fall

444 – Compiler Construction

444 Section 01 #5191 TuTh 6:30PM-7:20PM VEC-418
444 Section 02 #5192 TuTh 7:30PM - 8:45PM ECS-416 Lab

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Prerequisites: ***Tree/graph recursion;*** and **CECS 328** Data Structures and Algorithms, meaning a ***Working Knowledge*** of (AKA ability to easily program using) OO programming, proper S/W design/development methods, the Java language, testing, simple data structures (e.g., arrays, linked lists, stacks, queues, trees, hash tables), simple algorithm techniques (e.g., **recursion**. sorting, binary search).

Course Content: Principles of syntax directed compiler design: parsing, semantic analysis, optimization and code generation.

Course Goals: Understanding the mechanisms and components of compilers, their relationships and their underlying fundamental principles.

Instructor – Office

Charles Siska, E-mail: charles.siska@csulb.edu,
Office Loc: **VEC-404**, Hrs: **MoTuWeTh 8:45-9:15 pm**
For faster email response, include "**444**", in your Subject line, and "**Help**" if you have questions.

Course Texts:

Required: *Crafting A Compiler*, by Charles N. Fischer, Ron K. Cytron, and Richard J. LeBlanc, Jr, 2009 (2010), Pearson/Addison-Wesley, ~ 720 pages.

Technical Proficiency Prerequisites

SWE: Technical proficiency in programming/software engineering (SWE) should correspond to the prerequisite(s) of the course. Students are expected to be intimately familiar with their development platform of choice and be able to write and debug code in Java at a level of proficiency that corresponds to the prerequisites of the course.

IT (Computer competence – Web search, Email, & Desktop Computing): Technical proficiency with information technology, such as, but not limited to, the use of web-based online services, sending and receiving electronic mail, and desktop computer file systems, is assumed.

Grading Basis

Plus and minus grading is not used when determining final grades. All scores are normalized to a scale of 0 to 100% before being averaged. The average score for each category is then used to compute the weighted average according to the weights in the table below.

20% Exam #1	33% Final Exam	7% Assignments, Quizzes,
20% Exam #2	20% Projects	Participation

The instructor reserves the right to increase a grade (e.g., based on class participation).

Exams/Quizzes

→ I provide all paper. You must bring two pens or pencils (one as backup), & maybe an eraser.

Quizzes are short, unannounced, no make-ups – used to verify you are keeping up.

Exams are comprehensive (to date) and used to verify your comprehension of the course material. They are typically composed of fill-in with some coding.

Exam #1, Thu, October 3rd (6th wk)

Exam #2, Thu, November 14th (12th wk)

Fall Recess

OPEN Nov 25-26 **MoTu** of Thanksgivg Wk (14th wk)

CLOSED "**Fall Break**", Nov 27 Wed – One Day (14th wk)

CLOSED Thanksgivg , Nov 28 Thu – Dec 1 Su (14th wk)

Final Exam, TBD May 11 – 17 // It will be set by the dept.

Makeup Exam Policy is nominally the same as for the Final, which is *"No make-up final examination will be given except for reason of illness or other verified emergencies."*
(NB, a makeup exam is usually harder than the original.)

Beachboard

We will be using Beachboard for notifications, class materials, the syllabus, etc.

Studying

For best results, **join or start a study group** in order to get the benefits of other viewpoints on understanding class material.

Attendance

Recall, above, no makeup for missed quizzes. You may miss up to 3 **(three)** class sessions (excepting Admin Drop policy and exam dates), but best **be extra well informed** if you do.
Warning: There is a strong correlation between missing classes and getting lower grades.
Also, find missed class details from your **study group** members, not the instructor.

Projects

Programming and written assignments will be discussed in class and posted to the course website in advance of their due dates. Each assignment description will include the assignment's grading plan. Written assignments must be typeset and presented in a professional manner. Presentation, spelling and grammar can be worth up to 30% of a written assignment's grade.
Comments: At a minimum, code must be commented, have descriptive names for identifiers, and contain a comment at the top of each file with pertinent information such as the student's name, email address, assignment name, and the course and section number (e.g., "444").

Readme.txt: A plain text readme.txt must be included with each assignment submission summarizing and documenting the work submitted.
Coding style: Coding style must conform to professional norms. Google's style guides are an excellent starting point, https://github.com/google/styleguide.
Each assignment is done individually, unless specified otherwise – check the assignment writeup.
Submitting: Each *coding project* will be **submitted via emailed zip file(s)**. You should be able to explain each part of your program source code. Status reports are expected.

Class Decorum

Causing distractions from the student learning environment in class may adversely affect your final grade. (Best be polite.) **Portable computer** use is **not allowed** in lecture **except** for taking notes.

Changes

Each student is responsible to be aware of any course announcements and changes, including changes to due dates and requirements. Changes will usually be announced via Beachboard, but may be announced first during lecture.

Academic Honesty

f you submit work purporting to be your own, it ought to be so. Otherwise, you will get bad results. You should be aware of and follow the spirit of CSULB's academic honesty policy. The University Catalog and the Class Schedule provide a detailed description of Academic Dishonesty under University Regulations. If you quote or borrow and paraphrase pieces from others (including, e.g., your work in earlier classes) it must be properly cited.

Behavior:

The following behaviors are **not allowed** during an exam without permission:

- Looking toward another student's test
- Helping another student with answers
- Talking or texting
- Leaving the classroom w/out permission
- Using any electronic devices or calculators
- Using any form of notes w/out permission

Penalty for violation ranges from getting **zero for the exam up to an 'F' for the course**.
(We don't want that. Best be respectful of the rules.)

Administrative Drops

There are people waiting to get a seat in the class. If you really want to keep your seat, best be in it. Per department policy, any student who misses the first week meetings, and does not notify the Department office to hold their seat, may be dropped from the class.

Emergencies

Campus Emergency Information number is (562) 985-4111. Please learn the emergency exits near the classroom. In an evacuation emergency, use the nearest safe exit to exit the building. For your own safety and the safety of others, each student is expected to read and understand the guidelines published at http://emergency.csulb.edu. Should an emergency occur, follow the instructions given to you by faculty, staff, and public safety officials.

Instructional Continuity

Due to an event such as an epidemic or a natural disaster that disrupts normal campus operations, students must monitor the course Beachboard site and their campus email address for any instructions and assignments that the instructor announces.

Important Dates

CSULB's Academic Calendar is at http://web.csulb.edu/divisions/aa/calendars for school **closures and holidays**. CSULB's Key Registration Dates and Deadlines Calendar (for **adding, dropping,** and **withdrawing**) is at http://web.csulb.edu/depts/enrollment/dates/registration_fall.html.

ADA Accommodations

Any student who, because of a disability, may require special arrangements in order to meet course requirements must register with the Office of Disabled Student Services within the first week of classes. They can be reached by phone at (562) 985-5401. Their email address is http://www.csulb.edu/divisions/students/dss. Their office is located Brotman Hall 270. The instructor may request verification of need from the Dean of Students. Students requesting accommodations shall inform their instructors during the first week of classes about any disability or special needs that may require specific arrangements/accommodations related to attending class sessions, completing course assignments, writing papers or quizzes, tests or examinations.

Accommodations for Students Registered with Bob Murphy Access Center

Students with a disability or medical restriction who are requesting a classroom accommodation should contact the Bob Murphy Access Center (BMAC) at 562-985-5401 or visit SSC, room 110 during 8AM-5PM weekday hours. BMAC will work with the student to identify a reasonable accommodation in partnership with appropriate academic offices and medical providers. We encourage students to reach out to BMAC as soon as possible.