

**California Lutheran University
Computer Science Department
Course Description**

Instructor: Dr. Peng
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Title: CSC 582 Compiler
Text: Automata, Computability and Complexity: Theory and Applications, Rich, Prentice Hall
eText: ISBN-10 0-13-513566-4, ISBN-13 978-0-13-513566-2
Print: ISBN-10 0-13-228806-0, ISBN-13 978-0-13-228806-4
Office Hour: 5-6PM before class
Semester: Summer 2012
Classroom: D8

Course Description:

Compiler is a software utility that translates source codes written in various computer programming languages into executable codes for the host machine. The design of compiler has evolved as that of modern programming language. While not too many computer scientists will build a compiler for any major programming languages, the concept and practice of compiler has been proven extremely valuable in advanced fields such as software patterns, static code analysis, detection of irregular network activities, etc. This course will introduce the foundations to serve the needs in the aforementioned tasks.

Objectives:

The objective of this course is to study the core technologies in compiler design. Topics include strings, language, determinism, nondeterminism, finite state machine, regular expression, deterministic finite state machine, nondeterministic finite state machine, grammar, regular grammar, regular language, decision procedure, context-free grammar, context-free language, normal forms, and pushdown automata.

Prerequisites:

MSCS Director Dr. Klassen's or class instructor's permission.

Learning Methods:

Lectures, assignments, in-class participation, and online Blackboard discussions will be used to illustrate important points in the text and subjects. Students will expect to have read assigned material prior to each class, and to spend at least 72 minutes a week in the discussion board forums.

Assignments:

All assignments are posted on Blackboard. Assignments are mostly exercises in the text. There will also be selected problems in Blackboard for online discussions. Postings can be individual/group's own work, or feedbacks to others' postings. All submissions are handled exclusively via Blackboard.

Late submissions will NOT receive any credits.

Grading:

Homework, participation, and exams; 40% for homework, 10% class participation, 10% discussion board participation, and 40% exams, will determine final grades. Overall score for final grade A is 97-100, 94-96 for A-, 91-93 for B+, 88-90 for B, 85-87 for B-, 82-84 for C+, 79-81 for C, 76-78 for C-, 73-75 D+, 70-72 for D, 67-69 for D-, and F otherwise. Grading standards for participations are as follows:

	Student Achievement			
	Below Average	Average	Above Average	Outstanding
Class participation (4pts/class)	Students don't participate actively in the live-chat and even when directed do not contribute to class substantively. The numerical value of this level of participation is 0-1 points.	Students are largely passive during the live-chat, but do provide informed responses to questions when asked. Or, students are pro-active, but do not provide contributions of essential value. The numerical value of this level of participation is 2 point.	Students speak frequently during the live-chat without the need for the facilitator to stimulate their participation. Their contributions are of acceptable value, but largely generic. The numerical value of this level is 3 points per class.	Students are very active during the live-chat. They ask questions or make comments that help clarify and synthesize discussion, relate their ideas or experiences to chat topics, contribute examples that are relevant, acknowledge and extend the ideas of others and relate content from class materials, readings and experiences to the discussions. The numerical value of this level is 4 points.
Discussion Boards participation (4 pts per discussion board)	Students largely restate the obvious, concur with other students' opinions or simply repeat text from other sources used in the course. They do not foster further dialogue. Contributions lack substance and coherence. The numerical value of this level is 0-1 points per discussion board.	Students' contributions lack substance, but they are coherent and well structured. They are not challenging, and do not foster further dialogue. The numerical value of this level is 2 point per discussion board.	Students' contributions are substantive and coherent, but they are isolated, not challenging and do not foster further dialogue. The numerical value of this level is 3 points per discussion board.	Students show initiative by initiating or stimulating a discussion with statements or further questions that are challenging and/or foster further dialogue. Contributions / reactions to other students' contributions are substantive and coherent. The numerical value of this level is 4 points per discussion board.

Tentative Schedule:

class	activity
1	introduction, language, string
2	language hierarchy, computation, finite state machine
3	finite state machine
4	exam 1
5	regular expression
6	context-free grammars
7	exam 2
8	pushdown automata
9	non/context-free languages
10	parsing
11	exam 3

Course Evaluations Statement:

All course evaluations are conducted online. Your feedback is important to us. You will receive an email message reminding you when the website is open for your feedback. The link is:

<http://courseeval.callutheran.edu>

Disability Statement:

California Lutheran University is committed to providing reasonable accommodations in compliance with ADA of 1990 and Section 504 of the Rehabilitation Act of 1973 to students with documented disabilities. If you are a student requesting accommodations for this course, please contact your professor at the beginning of the semester and register with the Accessibility Resource Coordinator, Wendy Perkins, for the facilitation and verification of need. The Accessibility Resource Coordinator is located in the Center for Academic and Accessibility Resources (CAAR) Office in the Pederson Administration building, and can be contacted by calling 805.493.3878 or emailing wperkins@callutheran.edu

Statement on Academic Honesty:

The educational programs of California Lutheran University are designed and dedicated to achieve academic excellence, honesty and integrity at every level of student life. Part of CLU's dedication to academic excellence is our commitment to academic honesty. Students, faculty, staff and administration share the responsibility for maintaining high levels of scholarship on campus. Any behavior or act which might be defined as "deceitful" or "dishonest" will meet with appropriate disciplinary sanctions, including dismissal from the University, suspension, grade F in a course or various forms of academic probation. Policies and procedures regarding academic honesty are contained in the faculty and student handbooks.

Plagiarism, cheating, unethical computer use and facilitation of academic dishonest are examples of behavior which will result in disciplinary sanctions. Plagiarism includes, but is not limited to:

- word for word copying without using quotation marks or presenting the work as yours
- using the ideas or work of others without acknowledgement
- not citing quoted material.

Students must cite sources for any information that is not either the result of original research or common knowledge.

Pearson Library

At Cal Lutheran we won't tell you what to think — we'll teach you how to think. You'll learn how to gather information, analyze and synthesize. Don't worry about the "gathering"... that's the easy part. We have technicians, information specialists, and trainers to help you find the information you need. Pearson Library provides access to scholarly books, journals, ebooks, and databases of full text articles from scholarly journals. To begin using these materials, visit the library web page

<http://www.callutheran.edu/iss/research/> . Librarians are available to assist you at the Thousand Oaks campus or via Meebo chat on the Library's home page or emailing CLULibrary@callutheran.edu. You may contact the library at (805) 493-3250. If you attend classes at one of CLU's satellite locations, see <http://www.callutheran.edu/iss/research/satellite.php> for the full range of services provided.

CLU Writing Center

Experienced Writing Center tutors help CLU's undergraduate and graduate students with their writing projects: reading free writes to find the best ideas; refining thesis statements; showing students how to structure paragraphs; and using specific exercises to improve sentence syntax. They work with whole classes as well as with individual students on the style guidelines required for papers in the various disciplines.

All enrolled CLU students are invited to make use of our services. For additional information, please visit http://www.callutheran.edu/writing_center/ , call 805-493-3257, [book online at GenBook](#), or stop by the Writing Center (The Darling Collaboration Suite in the library) to schedule an appointment.