

Department of Computer Science and Engineering
National Institute of Technology Calicut

Tentative Course Details: Monsoon 2016

CS6102 Compiler Design

Course:

Code : CS6102
Title : Compiler Design
Lecture Hours : A slot
Room : MB207 / CSE 202

Instructor:

Name : Saleena N
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Course Objective:

- To study advanced topics in code optimization and code generation.

References:

- Aho A.V., Lam M.S., Sethi R., and Ullman J.D. Compilers: Principles, Techniques, and Tools. Pearson Education, 2007.
- Appel A.W and Palsberg J. Modern Compiler Implementation in Java. Cambridge University Press, 2002.
- Steven Muchnick. Advanced Compiler Implementation. Morgan Kauffman Publishers, 1997.
- Srikant Y.N and Shankar P. The Compiler Design Handbook: Optimization and Machine Code Generation. CRC Press, 2003.
- Additional reading material may be assigned as needed.

Evaluations:

Mid-Term Exam I : 20%
Mid-Term Exam II : 20%
Assignments : 20%
Final Exam : 40%

Course Schedule:

Week	Evaluations	Topic
Week 01		Review of Compilation
Week 02		Intermediate Representation
Week 03		Control Flow Analysis: Basic Blocks and CFG
Week 04		Control Flow Analysis: Dominators and Loops
Week 05		Introduction to Optimizations
Week 06	Midterm Exam1	
Week 07		Data Flow Analysis: Traditional Analyses
Week 08	Assignment Evaluation I	Data Flow Analysis: Framework
Week 09		Code Optimization: Partial Redundancy Elimination
Week 10		Code Optimization: Global Value Numbering
Week 11	Midterm Exam2	
Week 12		Static Single Assignment Form
Week 13	Assignment Evaluation II	Register Allocation
Week 14		Machine Code Generation: Instruction Selection
Week 15		Machine Code Generation: Run-time Storage Management
Week 16		Machine Code Generation: A Simple Code generation Algorithm
Week 17		Other Topics

Grading Policy:

- Grading will be relative.
- Even though the grading will be relative here is a tentative marks to grade conversion formula:
90-100: S; 80-89: A; 70-79: B; 60-69: C; 50-59: D; 40-49: E; <40: F.
- All issues regarding valuation of exams must be resolved within one week after the marks are announced.

Standard of Conduct:

Each student is expected to adhere to high standards of ethical conduct, especially those related to cheating and plagiarism. Any submitted work MUST BE an individual effort. Any academic dishonesty will result in zero marks in the corresponding exam or assignment and will be reported to the department council for further action. (Refer to department policy on academic integrity: <http://cse.nitc.ac.in/sites/default/files/Academic-Integrity.pdf>)