COMPILER DESIGN

Paper Code: CIC‐351

Semester: 5th Sem

LECTURE PLAN

Work load (Lectures) per week (in hours) - 03

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| Week | Lecture Day | Topic |
| 1st | 1st | Brief overview of the compilation process, structure ofcompiler &amp |
| 2nd | its different phases, lexical analyzer, cross compilerBootstrapping,  |
| 3rd | quick &amp; dirty compiler, Shift-reduce parsing |
| 2nd | 4th | operator-precedence parsing, topdown parsing, predictive parsing, |
| 5th | LR(0), LALR parsingtechniques. Design and implementation of a lexical analyzer and parsingusing automated compiler construction tools(eg. Lex, YACC, PLY), |
| 6th | LL(1) andLL(k) grammar, bottom up parsing, SLR |
| 3rd | 7th | Syntax-directed translation schemes, implementation of syntaxdirected translationsintermediate code,  |
| 8th | translation of assignmentstatements, Boolean expressions |
| 9th | postfix notation, threeaddress code, quadruples, and triples |
| 4th | 10th | control statements, SemanticAnalysis, Type Systems |
| 11th | Type Expressions, Type Checker, TypeConversion |
| 12th | Symbol table, data structures and implementation ofsymbol tables, |
| 5th | 13th | representing scope information. Run Time StorageAdministration |
| 14th | implementation of a simple stack allocation scheme,storage allocation in block structured languages and non blockstructured languages |
| 15th | Error, Lexical-phase errorssyntacticphaseerrors |
| 6th | 16th | semantic errors, The principle sources of optimization |
| 17th | loop optimization, the DAG representation of basic blocks |
| 18th | value number and algebraiclaws |
| 7th | 19th | Object programs |
| 20th | a machine model |
| 21st | registerallocation and assignment |
| 8th | 22nd | code generation from DAGs |
|  | 23rd | peepholeoptimization. |
|  | 24th | single code generator |
| 9th | 25th | problems in codegeneration |
| 26th | global dataflow analysis |
| 27th | loop optimization |