**SSN COLLEGE OF ENGINEERING**

**Department of CSE**

COURSE PLAN

SUBJECT NAME : COMPILER DESIGN

SUBJECT CODE : CS6660

DEGREE / YEAR : B.E. CSE / I YEAR/ A & B Sections

BATCH : 2014-2018

SEMESTER : VI (2016-17: EVEN)

NAME OF THE STAFF : Ms. B. PRABAVATHY & Dr. B. BHARATHI

DESIGNATION : ASSISTANT PROFESSOR & ASSOCIATE PROFESSOR

Teaching Methodology and aids : PowerPoint presentations\Projector\Use of ICT\Chalk and Blackboard

(Content Delivery Method (CDM)) (For all topics)

| **Sl.No** | **Unit No** | Topic | **CDM** | **No. of Hrs**  **(plan)** | **No. of Hrs**  **(actual)** | **Remarks** |
| --- | --- | --- | --- | --- | --- | --- |
|  | UNIT 1 **( 5 Hrs)** | **Introduction to compilers**  Translators-Compilation, interpretation, Language processors |  | 1 |  |  |
|  | Phases of a Compiler |  | 1 |  |  |
|  | Errors encountered in different phases |  | 1 |  |  |
|  | The Grouping of Phases-Compiler Construction Tools |  | 1 |  |  |
|  | Programming language basics |  | 1 |  |  |
|  | Planned Hours |  | 5 |  |  |
|  | UNIT 2 (9 Hrs) | **Lexical analysis**  Need and role of lexcial analyser, lexical errors |  | 1 |  |  |
|  | Expressing Tokens by Regular Expressions |  | 1 |  |  |
|  | Converting Regular Expression to DFA |  | 2 |  |  |
|  | Minimization of DFA | T | 2 |  |  |
|  | Language for Specifying Lexical analyzers, LEX |  | 2 |  |  |
|  | Design of Lexical Analyzer for a sample Language |  | 1 |  |  |
|  | Planned Hours |  | 9 |  |  |
|  | UNIT 3 (13 Hrs) | **Syntax analysis**  Need and role of syntax analyser |  | 1 |  |  |
|  | Context free grammar |  | 1 |  |  |
|  | Top Down Parsing -General Strategies |  | 1 |  |  |
|  | Recursive Descent Parsing |  | 1 |  |  |
|  | Predictive Parsing, LL(1) |  | 1 |  |  |
|  | Bottom-up parsing **–** Shift Reduce Parsing |  | 1 |  |  |
|  | LR Parser - SLR Parser | T | 2 |  |  |
|  | LALR Parser |  | 2 |  |  |
|  | Error Handling and Recovery in Syntax Analyzer |  | 1 |  |  |
|  | YACC |  | 1 |  |  |
|  | Design of a syntax Analyzer for a Sample Language |  | 1 |  |  |
|  | Planned Hours |  | 13 |  |  |
|  | UNIT 4 (12 Hrs) | Syntax directed translation & Run time environment  Syntax directed Definitions-Construction of Syntax Tree |  | 1 |  |  |
|  | Bottom-up Evaluation of S-Attribute Definitions |  | 1 |  |  |
|  | Design of predictive translator |  | 1 |  |  |
|  | Type Systems |  | 1 |  |  |
|  | Specification of a simple type checker |  | 1 |  |  |
|  | Equivalence of Type Expressions-Type Conversions. |  | 1 |  |  |
|  | Source Language Issues |  | 1 |  |  |
|  | Storage Organization |  | 1 |  |  |
|  | Storage Allocation |  | 2 |  |  |
|  | Parameter Passing-Symbol Tables |  | 1 |  |  |
|  | Dynamic Storage Allocation-Storage Allocation in FORTRAN |  | 1 |  |  |
|  | Planned Hours |  | 12 |  |  |
|  | UNIT 5 (9 Hrs) | **Code optimization & Code Generation**  Principal Sources of Optimization |  | 1 |  |  |
|  | DAG representation of Basic Blocks |  | 1 |  |  |
|  | Optimization of Basic Blocks |  | 2 |  |  |
|  | Global Data Flow Analysis |  | 2 |  |  |
|  | Efficient Data Flow Algorithms |  | 1 |  |  |
|  | Issues in Design of a Code Generator |  | 1 |  |  |
|  | A Simple Code Generator Algorithm |  | 1 |  |  |
|  | Planned Hours |  | 9 |  |  |

**Total Number of Syllabus Hours: 45**

**Total Number of Planned Hours: 48**

**Content Delivery Methods (CDM): T- Tutorial**

**PREPARED BY VERIFIED BY APPROVED BY**

**[Ms. B. PRABAVATHI & PAC TEAM Dr. CHITRA BABU**

**Dr. B. BHARATHI] HOD-CSE**