

KALASALINGAM UNIVERSITY  
(Kalasalingam Academy of Research and Education)  
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING  
ODD SEMESTER 2013 - 2014  
COURSE PLAN

Subject / Code : Compiler Design Lab/ CSE385      Course Credits : 2  
Year/Semester/Section : III/V/ CSE

---

**Prerequisite:**

- Automata theory and formal languages
- Programming in C
- Data structures, algorithms, and complexity

**Objectives:**

- To gain a complete knowledge about compilers.
- To achieve skills in constructing Lexical Analyzers.
- To obtain knowledge in parsing algorithms.
- To get skills in generating Intermediate Code.
- To learn more about simulation of memory management.
- To get Skills in various compiler tools.

**Learning outcome and end use:**

- Be able to building a parser
- Understand the Role of a scanner
- Understand the Tokens, lexemes, specifications of tokens, regular expressions, regular definitions, and regular expression extensions.
- Understand Stack-based predictive parsing, parse tables, table-driven predictive parsing algorithm (LR parsing algorithm), FIRST sets, and FOLLOW sets.
- Be able to apply these concepts to a software project.

**Safety and Precautions:**

**Do's:**

- Be punctual
- Follow dress code
- Remove the foot wears
- Keep personal belonging in allotted place
- Submit the observation record of previous experiments
- Use the allotted system and login as per instruction only
- Take the printouts regularly
- While leaving the lab, arrange the chairs you are seated in a proper way.
- Help to maintain the cleanliness of the lab
- Maintain strict discipline

**Dont's:**

- Don't use the system for typing letters, reports etc., during lab hours
- Don't use others login
- Don't change the configuration and system settings
- Don't bring floppies, CDs inside lab without permission
- Don't load unauthorized software

**Method of Assessment:**

Algorithm	-	20
Coding	-	30
Program Execution	-	20
Result Verification	-	10
Record	-	10
Viva Voce	-	10

**Lab Plan**

S. No	Experiment Details	Number of Periods	Cumulative Number of Periods
1	Design Token Separator for the given Expression	3	3
2	Implementation of a lexical analyzer	3	6
3	Construction of a NFA from a regular expression	3	9
4	Construction of a DFA from a regular expression	3	12
5	Find leading and trailing of the Grammar	3	15
6	Constructing TOP down parser table	3	18
7	Implementation of shift reduce parsing Algorithm	3	21
8	Implementation of Operator precedence Parsing Algorithm	3	24
9	Constructing LR Parsing table	3	27
10	Generation of DAG for the given expression	3	30
11	Simulation of Symbol table Management	3	33
12	Generation of a code for a given intermediate code	6	36
13	Use LEX tool to implement a lexical analyzer	3	39
14	Use LEX and YACC tool to implement a parser	3	42
15	Use LEX and YACC tool to implement a desktop calculator	3	45

Prepared By,

Verified By,

Course Coordinator

(HOD/CSE)