FR. Conceicao Rodrigues College Of Engineering

Father Agnel Ashram, Bandstand, Bandra-west, Mumbai-50
Department of Computer Engineering
T.E. (Computer) (semester VI)

(2022-2023)

Practical Plan

Lab Code	Lab Name	Credit
CSL601	**System Programming and Compiler Construction Lab**	1
Prerequisite: Theoretical computer science, Operating system. Computer Organization and Architecture		
Lab Outcomes: At the end of the course, the students will be able to		
CSL601.1	Generate machine code by implementing two pass assemblers.	
CSL601.2	Implement Two pass macro processor.	
CSL601.3	Implement scanner and parser of compiler	
CSL601.4	Implement synthesis phase of compiler(any one).	

CO	BL	C	PI	PO	Mapping
CSL601.1.	2,3	1.3 1.4	1.3.1 1.4.1	PO1	2
		2.1 2.4	2.1.3 2.4.3	PO2	2
		3.2	3.2.1	PO3	1
CSL601.2.	2, 3	1.3 1.4	1.3.1 1.4.1	PO1	2
		2.2 2.4	2.2.3 2.4.3	PO2	2
		3.2	3.2.1	PO3	1
CSL601.3.	2,3	1.3	1.3.1	PO1	1
		2.2	2.2.2	PO2	1
		3.2	3.2.1	PO3	1
		5.1	5.1.1	PO5	1
CSL601.4.	2,3	1.3	1.3.1	PO1	2
		2.2	2.2.2	PO2	1
		3.2	3.2.1	PO3	1

PO/PSO

Relationship of course outcomes with program outcomes: Indicate 1 (low importance), 2 (Moderate Importance) or 3(High Importance) in respectivemapping cell.

	PO1 (Engg Know)	PO2 (Ana)	PO3 (De sign)	PO4 (inve stiga)	PO5 (tools)	PO6 (engg Soci)	PO7 (Env)	PO8 (Eth)	PO9 (ind Team)	PO10 (com m.)	PO11 (PM)	PO12 (life Long)	PSO1	PSO2
CSL601.1	2	2	1											
CSL601.2	2	2	1											
CSL601.3	1	1	1	1									1	
CSL601.4	1	1	1										1	
Total	6	4	4	1									1	
CO–PO Matrix														

CO-PSO Mapping:

CO	BL	C	PI	PO	Mapping
CSL601.3.	2,3	1.1	1.1.3	PSO1	1
CSL601.4.	2,3	1.1	1.1.3	PSO1	1

Justification of PO to CO mapping

Course Outcome	Competency	Performance Indicator
CSL601.1	1.3 Demonstrate competence in engineering fundamentals 2.1 Demonstrate an ability to identify and formulate complex engineering problem 2.4 Demonstrate an ability to execute a solution process and analyze results 3.2 Demonstrate an ability to generate a diverse set of alternative design solutions	1.3.1 Apply engineering fundamentals 2.1.3 Identify an algorithm that applies to a given problem 2.4.3 Identify the limitations of the solution and sources/causes 3.2.1 Able to explore design alternatives.
CSL601.2	1.3 Demonstrate competence in engineering fundamentals	1.3.1 Apply engineering fundamentals

	2.1 Demonstrate an ability to identify and formulate complex engineering problem	2.1.3 Identify an algorithm that applies to a given problem
	2.4 Demonstrate an ability to execute a solution process and analyze results	2.4.3 Identify the limitations of the solution and sources/causes
	3.2 Demonstrate an ability to generate a diverse set of alternative design solutions	3.2.1 Able to explore design alternatives.
CSL601.3	1.3 Demonstrate competence in engineering fundamentals	1.3.1 Apply engineering fundamentals
	2.2 Demonstrate an ability to formulate a solution plan and methodology for an engineering problem	2.2.2 Identify functionalities and computing resources.
	3.2 Demonstrate an ability to generate a diverse set of alternative design solutions	3.2.1 Able to explore design alternatives.
	5.1 Demonstrate an ability to identify/create modern engineering tools, techniques and resources	5.1.1 Identify modern engineering tools, techniques and resources for engineering activities
CSL601.4	1.3 Demonstrate competence in engineering fundamentals	1.3.1 Apply engineering fundamentals
	2.2 Demonstrate an ability to formulate a solution plan and methodology for an engineering problem	2.2.2 Identify functionalities and computing resources.
	3.2 Demonstrate an ability to generate a diverse set of alternative design solutions	3.2.1 Able to explore design alternatives.

	12.2 Demonstrate an ability to identify changing trends in engineering knowledge and practice	12.2.1 Identify historic points of technological advance in engineering that required practitioners to seek education in order to stay current

CO to PSO

Course Outcome	Competency	Performance Indicator
CSL601.3	1.1 Demonstrate competence in mathematical modelling, and engineering fundamentals.	1.1.3 Apply theory and principles of Computer Science and engineering.

LabAssessmentTools:

Course Outcomes	*Direct Method 80%*			*Indirect Method (20%)*
	Implementation	Postlab Assignments	End Sem Exam	Course exit survey
CSL601.1	30%	20%	50%	100%
CSL601.2	30%	20%	50%	100%
CSL601.3	30%	20%	50%	100%
CSL601.4	30%	20%	50%	100%

CO calculation= (0.8 *Direct method + 0.2*Indirect method)

Rubrics for assessing Course Outcome with each assessment tool:

1	Time Line (2)	N.A	Two sessions late (0)	One session late (1)	Early or on time (2)
2	Output (3)	Practical not performed. (0)	Practical performed but failed to show output due to some error.	Output shown but not as expected (Partial output) (2)	Expected output shown (3)

			(1)		
3	Code optimization (3)	Practical not performed (0)	Code is unstructured and difficult to understand(1)	The code is structured (2)	The code is structured and optimized (3)
4	Knowledge about the topic (2)	N.A	Not able to answer any question(0)	Able to answer few questions (1)	Answered all the questions with relevant explanation(2)

Attainment:

CO CSL602.1:

Direct Method
$$A_{CSL602.1D} = 0.3 * Lab\ Performance + 0.2 * Post\ Lab + 0.5 * SEE$$
Final Attainment:
$$A_{CSL602.1} = 0.8 * A_{CSL602.1D} + 0.2 * A_{CSL602.1I}$$

CO CSL602.2:
Direct Method
$$A_{CSL602.2D} = 0.3 * Lab\ Performance + 0.2 * Post\ Lab + 0.5 * SEE$$
Final Attainment:
$$A_{CSL602.2} = 0.8 * A_{CSL602.2D} + 0.2 * A_{CSL602.2I}$$

CO CSL602.3:
Direct Method
$$A_{CSL602.3D} = 0.3 * Lab\ Performance + 0.2 * Post\ Lab + 0.5 * SEE$$
Final Attainment:
$$A_{CSL602.3} = 0.8 * A_{CSL602.3D} + 0.2 * A_{CSL602.3I}$$

CO CSL602.4:
Direct Method

$$A_{CSL602.4D} = 0.3 * Lab\ Performance + 0.2 * Post\ Lab + 0.5 * SEE$$

Final Attainment:

$$A_{CSL602.4} = 0.8 * A_{CSL602.4D} + 0.2 * A_{CSL602.4I}$$

Practical Session Plan

CLASS	**TE Computer Engineering, Semester VI**
Academic Term	**January- April 2023**
Subject	**System Programming and Compiler Construction Lab (CSL 601)**

Evaluation System		*Hours*	*Marks*
	Practical Examination	--	--
	Oral Examination	--	25
	Term work	--	25
	Total	--	50

Time Table	*Day*	*Batch*	*Time*
	Monday	*A*	*2.45-4.45Pm*
	Wednesday	*D*	*11.00am-1.00 pm*
	Thursday	*C*	*11.00am-1.00 pm*
	Friday	*B*	*11.00am-1.00 pm*

Title of Experiments

Sr.	*Title*	*Attained COs*
1	Implementations of two pass Assembler.	CSL601.1
2	Implementation of Two pass Macro Processor.	CSL601.2
3	Implement symbol table	CSL601.3
4	Implementation of Lexical Analyzer.	CSL601.3
5	Implementation of Parser (Any one).	CSL601.3
6	Study and implement experiments on LEX, YACC.	CSL601.4
7	Implementation of code generation phase of compiler.	CSL601.3

Newly added experiments

1	To generate three address codes	CSL601.4

Strong Students Activity

1	Implement First and Follow set of given grammar.	CSL601.3
2	Implement mini–C Compiler using YACC.	CSL601.3

Practical Session Plan

Batch	*Dates*		*Remarks*
	Planned	*Actual*	
Experiment No.3 Implement symbol table			
A	23/01/2023	23/01/2023	
B	23/01/2023	23/01/2023	

C	02/02/2023	02/02/2023	
D	25/01/2023	25/01/2023	

Experiment No. 4
Implementation of Lexical Analyzer.

A	30/01/2023	30/01/2023	
B	30/01/2023	30/01/2023	
C	09/02/2023	09/02/2023	
D	01/02/2023	01/02/2023	

Experiment No. 5
Implementation of Parser (Any one).

A	06/02/2023	06/02/2023	
B	06/02/2023	06/02/2023	
C	16/02/2023		
D	08/02/2023		

Experiment No. 6
Study and implement experiments on LEX, YACC.

A	20/02/2023	20/02/2023	
B	20/02/2023	20/02/2023	
C	23/02/2023		
D	15/02/2023		

Experiment No.8
To generate three address codes .

A	13/02/2023	13/02/2023	
B	13/02/2023	13/02/2023	
C	09/03/2023	16/03/2023	**Tech Evenet Cresendo - 9th to 12th MAr 23**
D	08/03/2023	08/03/2023	

Experiment No. 7
Implementation of code generation phase of compiler.

A	27/02/2023	27/02/2023	
B	27/02/2023	27/02/2023	
C	16/03/2023	23/03/2023	**UT 1 – 28/02/23 to 03/03/23**
D	15/03/2023	15/03/2023	

Experiment No. 1
Implementations of two pass Assembler.

A	13/03/2023	03/04/2023	**Euphoria 27th to 31st Mar 23**
B	13/03/2023	03/04/2023	
C	05/04/2023	05/04/2023	
D	06/04/2023	06/04/2023	

Experiment No. 8
Implementation of Two pass Macro Processor.

A	20/03/2023	10/04/2023	
B	20/03/2023	10/04/2023	
C	05/04/2023	12/04/2023	
D	06/04/2023	13/04/2023	

Submitted By	Approved By	
Prof. Sangeeta Parshionikar	i) Dr. Sujata Deshmukh	Sign:
	v) Prof. Roshni Padate	Sign:
Date of Submission:	Date of Approval:	
Remarks by DQAC (if any)		