Course: Capstone Project **Course code: 18ECSW401**
Year: 2018-19 **Semester: 8**

Course Outcomes-CO

At the end of the course students will be able to:

i. Identify the problem and perform requirement analysis.

ii. Design potential solutions and evaluate to select optimal solution

iii. Apply professional norms of project implementation to meet specified requirements.

iv. Apply the fundamental activities of module, integration and system testing to validate the system.

v. Analyze results and present technical/scientific findings effectively through written and oral mode.

Course Articulation Matrix (CAM)

CO	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
18ECSW401.1	Identify the problem and perform requirement analysis.	-	-	3	-	-	-	-	-	-	-	-	-	-	-
18ECSW401.2	Design potential solutions and evaluate to select optimal solution.	-	-	3	-	-	-	-	-	-	-	-	-	-	-
18ECSW401.3	Apply professional norms of project implementation to meet specified requirements.	3	-	3	-	3	2	2	2	-	-	-	-	2	-
18ECSW401.4	Apply the fundamental activities of module, integration and system testing to validate the system.	-	-	3	-	3	-	-	-	-	-	2	-	-	3
18ECSW401.5	Analyze results and present technical/scientific findings effectively through written and oral mode.	-		-	3	-	-	-	-	-	3	-	3	-	-
18ECSW401		**3**	**-**	**3**	**3**	**3**	**2**	**2**	**2**	**-**	**3**	**2**	**3**	**2**	**3**

Evaluation Scheme and Rubrics

ISA – Review 1

Capstone Project Review-1 Assessment Criteria

Review No.	#	Performance Indicators	Marks	Rubrics Parameters	Marks	CO	PO	BL
1	12.3.1	Demonstrate an ability to source and comprehend technical literature and other credible sources of information	20	Literature Survey /Existing System	6	1	12	L3
	4.1.1	Define a problem for purposes of investigation, its scope and importance through appropriate survey.		Problem Formulation	2	2	4	L3
	3.1.3	Synthesize system requirements from a review of the State of the Art.		Requirement Analysis	3	3	3	L3
	3.2.2	Generate diverse set of potential design solutions to meet system requirements by using design concepts, tools and techniques.		High Level Design	2	4	3	L3
	3.3.1	Apply suitable criteria to select optimal design solutions for further development		High Level Design	2	5	3	L3
	10.1.2	Write technical report for software development life cycle activities using standards		Report writing	2	7	10	L3
	10.2.2	Deliver effective oral presentations to technical and non-technical audiences.		Presentation	3	7	10	L3

Capstone Project Review-1 Assessment Rubrics

Rubrics Parameters	Excellent (8-10)	Competent (5-7)	Scope for improvement (0-4)
Literature Survey /Existing System	• Identified all the relevant source of information. • Understood & clearly summarized the concepts studied.	• Identified all the relevant source of information • Understood but unable to clearly summarize the concepts studied.	• Identified only few relevant source of information. • Unable to understand the concepts studied.
Problem Formulation	• Problem statement is precise, • Objectives, scope and constraints are clearly	• The Problem statement is precise. • Objectives, scope and constraints defined are	• The Problem statement, objectives, scope and constraints defined are not clear.

	defined.	not clear.	
Requirement Analysis	• All functional and non-functional (quantifiable) requirements are clearly specified.	• 70% of functional and non-functional (quantifiable) requirements are specified.	• Few functional and non-functional requirements are specified.
High Level Design	• Identified two different architectures for the quality attributes considered • Able to define all the subsystems.	• Identified two different architectures for the quality attributes considered • Able to define 70-80% subsystems.	• Identified only one architecture for the quality attributes considered. • Able to define few subsystems.
Low Level Design	• Listed all algorithms / methods for all the functionalities • Chosen appropriate algorithm/method and given justification.	• Listed 80 % of the algorithms/ methods. • Chosen appropriate algorithm/method but unable to give justification.	• Listed few algorithms / methods for all the functionalities • Unable to choose and justify the required algorithm.
Report writing	• The document has a suitable flow which precisely outlines the problem statement, motivations and scope.	• The document does not have a suitable flow and well defined problem statement, motivations and scope	• Unable to organize and report the project progress expected.
Presentation	• Voice is audible • Attitude indicates confidence and enthusiasm. • Audience attention is constantly maintained.	• Voice is Less audible. • Attitude indicates confidence but not enthusiasm. • Audience attention is mostly maintained.	• Difficult to hear. • Attitude indicates some lack of confidence and/or disinterest in subject. • Audience attention is minimally maintained

ISA – Review 2

Capstone Project Review-2 Assessment Criteria

Review No.	#	Performance Indicators	Marks	Rubrics Parameters	Marks	CO	PO	BL
2	1.4.1	Apply suitable data structures and programming paradigm to solve problems.	**20**	Suitable data structures and programming paradigm	5	3	1	L3
	5.1.2	Create/adapt/modify/extend tools to suit the needs		Modern tools & techniques	5	3	5	L3

				used				
	4.2.1	Develop and design experimental approach, specify appropriate equipment and procedures, implement this procedure and interpret the resulting data to characterize component.		Module implementation & integration	4	3	4	L3
	10.1.2	Write technical report for software development life cycle activities using standards.		Presentation & Report	4	4	10	L3
	11.3.1	Identify the tasks required to complete an engineering activity, and the resources required to complete the tasks		Tasks & time required to complete the activity	2	4	11	L3

Capstone Project Review-2 Assessment Rubrics

Rubrics Parameters	Excellent (8-10)	Competent (5-7)	Scope for improvement (0-4)
Suitable data structures and programming paradigm	• Chosen a suitable data structures. • Given proper justification and limitations/constraints if any.	• Chosen a suitable data structure to some extent but unable to give justification.	• Unable to choose suitable data structure.
Modern tools & techniques used	• Chosen a proper tools • Given proper justification and limitations/constraints if any.	• Chosen a proper tool to some extent but unable to give justification.	• Unable to proper tool.
Module implementation & integration	• Implemented 60 % of the modules using coding standards. • Performed unit testing.	• Implemented 50 % of the modules using coding standards. • Unable to perform unit testing.	• Incomplete implementation of modules. • Coding standard not used. • Unable to perform unit testing.

Presentation & Report	• Report is in the well-structured format. • The document has a suitable flow which outlines the problem statement, motivations, development and unit testing etc in accordance with Software Development Life Cycle	• Report is in the well-structured format. • The document does not have a suitable flow which outlines the problem statement, motivations, development and unit testing etc in accordance with Software Development Life Cycle	• Unable to organize and report the project progress expected. •
Tasks & time required to complete the activity	• Properly identified tasks required. • Properly identified resource required.	• Properly identified tasks required. • Didn't identified resource required.	• Didn't identified tasks required. • Didn't identified resource required.

ISA – Review 3

Capstone Project Review-3 Assessment Criteria

Review No.	#	Performance Indicators	Marks	Rubrics Parameters	Marks	CO	PO	BL
	10.1.2	Write technical report for software development life cycle activities using standards		Report	5	5	10	L3
	10.2.2	Deliver effective oral presentations to technical and non-technical audiences.		Presentation	5	5	10	L3

Capstone Project Review3- Assessment Rubrics

Rubrics Parameters	Excellent (8-10)	Competent (5-7)	Scope for improvement (0-4)
Report	• The document has a suitable flow which precisely outlines the literature review, problem statement, motivations, and scope, Requirement Analysis, Design, Implementation and Testing.	• The document does not have a suitable flow and well defined problem statement, motivations and scope, Requirement Analysis, Design, Implementation and Testing.	• Unable to organize and report the project progress expected.

Presentation	• Voice is audible • Attitude indicates confidence and enthusiasm. • Audience attention is constantly maintained.	• Voice is Less audible. • Attitude indicates confidence but not enthusiasm. • Audience attention is mostly maintained.	• Difficult to hear. • Attitude indicates some lack of confidence and/or disinterest in subject. • Audience attention is minimally maintained

Review Schedule:

Review No	Parameters	Outcomes	Week as per the COE	**Review** Period
Review 1	• Motivation. • Literature Survey. • Problem Identification and definition. • Objectives.	• Presentation • Reportonreview 1 (softcopy)	5th week	10th Feb to 15th Feb 2019
Review 2	Methodology and 70% of implementation.	• Demonstration • Report on • review1and2 (softcopy)	10th week	14th Mar to 21st Mar2019
Review 3	Complete working project.	• Demonstration with result analysis. • Entire project report and paper(softcopy and hardcopy)	15th week	20th Apr to 25th Apr 2019

Course Assessment Plan (CAP)

18ECSW401: Capstone Project

	Course Outcomes	Target							Program Outcomes Attained
		ISA 1	ISA 2	ISA 3	ESE		% students above Threshold	Threshold	
18ECSW401.1	Identify the problem and perform requirement analysis.	✓	-	-	✓		70 %	75 %	PO3-H
18ECSW401.2	Design potential solutions and evaluate to select optimal solution.	-	✓	-	✓		70 %	75 %	PO3-H
18ECSW401.3	Apply professional norms of project implementation to meet specified requirements.	-	✓	-	✓		75 %	75 %	PO1-H PO3-H PO5-H PO6-H PO7-H PO8-H PSO1-H
18ECSW401.4	Apply the fundamental activities of module, integration and system testing to validate the system.	-	✓	✓	✓		70 %	75 %	PO3-H PO5-H PO11-H PSO2-H
18ECSW401.5	Analyze results and present technical/scientific findings effectively through written and oral mode.	-	-	✓	✓		75 %	75 %	PO4-H PO10-H PO12-H

Course Assessment Report (CAR)

COs	PO1			PO3			PO4			PO5			PO6			P07			PO8			PO10			PO11			PO12			PSO1			PSO2		
	ESE	ISA	FINAL	ESE	ISA	FINA	ESE	ISA	FINA	ESE	ISA	FINA	ESE	ISA	FINA	ESE	ISA	FINA	ESE	ISA	FINA	ESE	ISA	FINA	ESE	ISA	FINA	ESE	ISA	FINA	ESE	ISA	FINA	ESE	ISA	FINA
18ECSW401.1				3	0	3																														
18ECSW401.2				3	0	3																														
18ECSW401.3	3	3	3	3	3	3				3	3	3	3	3	3	3	3	3	3	3	3										3	3	3			
18ECSW401.4				3	3	3				3	3	3													3	3	3							3	3	3
18ECSW401.5							3	0	3													3	0	3				3	0	3						
18ECSW401	3	3	3	3	3	3	3	0	3	3	3	3	3	3	3	3	3	3	3	3	3	3	0	3	3	3	3	3	0	3	3	3	3	3	3	3
Direct Attainment	3	-	3	3	3	3	3	3	-	3	3	3	3	3	3	-	3	3	3	3	3	3	-	3	3	3	3	3	3	-	3	3	3	3	3	3

ESA Rubrics

Parameters	Reviewer Evaluation	
	PI's	Max Marks
Literature Survey	12.3.1	10
Existing Methods	2.2.3	
Implementation & Results	4.2.1	20
Team Work	9.2.1	5
Report	10.1.2	5
Presentation	10.2.2	10
Total		50

Capstone Project Report Guidelines

Introduction

This document can be used as a guide for writing the project report by students associated with B.E programs of CSE department.

Binding Instructions

Cream colored hard bound report with CD/DVD attached in cover on the last page of bounded report.

Organization of report

- Outer title page (Cream color)
- Inner title page
- Certificate in the format enclosed from the college
- Certificate of the organization where the project is carried out. (if any)
- Acknowledgment
- Abstract (not exceeding 250-300 words, indicating salient features of the work.)
- Table of Contents
- List of tables
- List of figures
- Nomenclature
- Text of report Chapters (Main material)
- References

- Appendices

Typing Instructions

Use the LaTeX template provided. (No other template must be used)

Number of hard copy to be submitted

- One copy to the department.
- One copy to the concerned guide(s).
- One copies to the industry (if industry collaborated).
- One copy to the candidate.