

## BCA – 5th Semester

### Learning and Development Plan

CS5005: Project

Course Credit: 04

Total Hours: 04

**Course Objective:** To learn the concept of application development and implement the project as per the requirements determined. Design, configure and execute test cases that determine system performance and acceptability.

**Course Outcomes:** Upon completion of the course, the student shall be able to

CO1: Plan, design, implement useful and robust application by using the latest software development environment and tools.

CO2: Build data repository to construct, store and to implement business intelligence or executive dashboard.

CO3: Demonstrate the ability to work as a team member and/or leader.

CO4: Apply tool and technology knowledge along with standard coding conventions to build application.

CO5: Analyze, evaluate and use relevant application testing techniques for developed application environment.

CO6: Comprehend technical writing through preparation of Software Requirement Specifications.

CO7: Communicate effectively with a range of audiences.

#### **Programme Outcomes:**

PO1: Ability to understand the concepts of key areas in computer science.

PO2: Ability to design and develop system, component or process as well as test and maintain it so as to provide promising solutions to industry and society.

PO3: Effective communication and presentation skill.

PO4: Ability to understand professional and ethical responsibility.

PO5: Recognition of the need for life-long learning.

#### **Programme Outcomes and Course Outcomes Mapping:**

Course Outcomes	Programme Outcomes				
	PO1	PO2	PO3	PO4	PO5
CO1	Y	Y		Y	Y
CO2	Y	Y			
CO3	Y	Y	Y	Y	Y
CO4	Y	Y		Y	Y
CO5	Y	Y	Y	Y	Y
CO6	Y	Y		Y	Y
CO7			Y		

### **Skill set for Semester:**

- Professional Skill: Collaborative
- Writing Skill: Narrative
- Communication Skill: Physical Non-verbal
- Reading Skill: Research Analysis

### **Team Formation and Guide Allocation:**

- ☐ A project shall be done in a team consists of minimum 3 and maximum 4 students.
- ☐ Decision of project committee shall be final.
- ☐ Guide shall be allocated to the teams by project committee before start of the second week.
- ☐ Choice of tools and technologies for extended requirement shall be determined by students and guide after approval from project committee.

### **Project Guidelines:**

- ☐ Project team must refine the requirements analyzed in previous semester and freeze the project requirements with following ways of Extension :
  - User interface refinement for better usability and sophistication
  - TPS/ MIS and DSS reports refinement
  - Enrichment in existing user functionalities
  - Extend the system by introducing new stakeholder and their functionalities
  - Extend the system for non-functional requirements
  - Improve the automatic testing with help of tools and above the unit testing
  - Implementation of “Future Enhancement” defined in previous Semester

### **Project Hours:**

- ☐ Approximately 100 hours to be utilized by student for project work.

### **Support and guidance team for Project:**

- ☐ Support and Guidance Team is created so that student or guide can receive additional support for respective project work.

Support and Guidance team	
System Analysis and Design	BAD, JBU, PBG, ADP, RBP, GCP, GKP
Database Design	ADP, UJP, BAD, SHC
System Testing	PBG, BAD, PHP , GKP
Web based Development	JHT, MMS , RBP, APA
Mobile based Development	JHT, UJP ,PHP
Content Management over Web Application	MMS
Data Analytics	JVN, MMS, JHT , PBG, ASP
IoT based Development	MMS , JBU , ADP
Project Development Support	Respective Guide

### **Project Progress and Evaluation:**

☐ Rubric based continues evaluation shall be conducted on the basis of following parameters :

- Project timeliness
- Project enhancement
- Project implementation
- Project quality
- Project work sufficiency
- Project work related documentation
- Project work related presentation

☐ To determine the progress of the project work, following parameters must be considered :

Assessm ent No.	Parameter	Occurrence	Each of Marks	Weightage in CIE of marks (40)	Evaluated By	Tentative Dates of Semester	Skill set Mapping
A1	Requirement Freezing document	1	10	05x1= 05	Guide and Members of project committee		Reading , Writing , Thinking and Innovation
A2	Project Timeline	1	10	05x1= 05	Guide		Writing , Thinking ,Collaborative
A3	Document and Project presentation – 1	1	50	30x1= 30	Panel determined for Presentation		Reading , Writing , Collaborative and Communication
A4	External Examination	1	60	1 x 60 = 60		University declare	

Each team will be given at least thirty minutes of project presentation for assessment A3, A4 and forty five minutes for assessment A5 followed by approximately ten minutes of viva.

### **A1: Requirement Freezing: Guideline**

☐ Students have to submit extended project requirements in provided format on or before deadline.

**B.V.Patel Institute of Computer Science, Uka Tarsadia University BCA 5<sup>th</sup> Semester**

**Course Name:**

**Course Code:**

<b>Team Number</b>					
<b>Project Title</b>					
<b>Student- guide interaction during</b>	<b>Day</b>				<b>Total Hours per week</b>
	<b>Time duration</b>				
<b>Project Objectives and definition</b>					
<b>Previous semester project functionalities</b>					
<b>Extension points with description for current semester project work</b>					
<b>Tools and technology for current Semester</b>					

#### **Declaration:**

We hereby declare that we will not change the above given details for the entire semester. We are well aware that project work must be developed by the team members and must not be copied and (or) paid one. We acknowledge that, the institute has the authority for taking punitive actions against us for violation and/or non-compliance of the same.

Enrolment Number	Name	Signature

Team members were made aware by me regarding plagiarism and its consequences.

	<b>Signature</b>
<b>&lt;Guide Name&gt;</b>	

Date:

Place:

#### **Evaluation:**

<b>Requirement Freezing</b>	
<b>Parameter</b>	<b>Marks (10)</b>
Quality of extended requirement	40 %
Student Reporting	20 %
Selections of distinct functionality	10 %
Timeliness	10 %
Work Sufficiency	20 %

## **A2: Project Timeline: Guideline**

- ☐ Teams are expected to plan their project tasks well in advance and execute the same with punctuality.
- ☐ Students must keep track of submissions by timely referring the mails and guidelines/circular related to project work published on our website
- ☐ Project team must submit the timeline of [100 x total team members] schedule to the guide in the 4<sup>th</sup> week of semester.
- ☐ Project Timeline must consist task phase wise. Each phase must be having estimated start and end date and end of each phase, deliverables must be decided.
- ☐ Project Timeline must be submit in following format :

**<<Institute Name>>**

**<<Course>><<No.of Semester>> Semester**

**Course Name: Project**

**Course Code: CS5005**

**Project Team : <<No>>**

**Project Title:**

### **Project Timeline**

Project Timeline planning must list all the specific required tasks that are required achieve the functionalities described in system design. Subtasks must be measurable. Each phase must include deliverables as outcome.

Sr. No	Project Phase No	Sub Activities	Name of Responsible Person	Estimated Start Date	Estimated End Date	Deliverable
	<b>Total Hours</b>			<b>&lt;NN&gt;</b>		

### **Declaration:**

We hereby declare that the timeline is prepared keeping in mind the complexity of each task and other aspects related to this project development. The duration planned is meant to be as close as the actual one.

Enrolment Number	Name	Signature
The tasks and deadlines are approved.		
<<Guide Name>>		<<Signature>>

Date:

Place

### Evaluation:

- There shall be one timeline, which shall be evaluated by guide.
- Task and subtask must be align with software development process, indicating the flow from initialization phase and testing phase.

Timeline – 1	
Parameter	Marks (10)
Phase wise task distribution	30%
Student Reporting	20%
Linkage of task-subtask with estimated duration	30%
Work sufficiency	20%

- ☐ Timeline shall be evaluated by guide on daily basis and the status has to be marked by the project guide on the day of estimated completion Date or actual end date, whichever comes first. The status can further be updated on the day of estimated completion date or actual end date whichever comes later. When the status is set to “Completed”, the mode must also be marked by the guide.
- ☐ Timeline must use for reporting purpose.

Ph ase No.	Project Sub Task	Estim ated Start Date	Es ti m at ed En d Da te	Actu al Star t Date	Act ual En d Dat e	Compl ete status by Studen ts	Complete status by Guide Status (Completed /Pending)& Date	Commen ts from Guide- CoGuide	Mode (Intime /Early/D elayed)& Date

- ☐ Timeline as log book must be submit on end of semester with updated status and mode by guide to the project committee in above given format and declaration :

### Declaration:

- ☐ The estimated dates are as per the timeline planning submitted. The actual dates are mentioned as the tasks have started and/or ended.

☐

Enrolment Number	Name	Signature

The status is marked after appropriate verification.

<<Guide Name>>	<<Signature>>
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### **A3: Document and Project presentation – 1**

#### **Guideline:**

- ☐ Students have to verify document and get it signed by guide, and submit to project committee.
- ☐ Project Document -1 will be partial document.
- ☐ If a student failed to meet the deadlines, he/she shall receive zero marks in particular parameter.
- ☐ The presentation shall be evaluated by examiner panel.
- ☐ During presentation, a student has to bring updated timeline, work to be present.
- ☐ Student shall use presentation slides to explain the project work.
- ☐ No make-up work shall be accepted for missed or failed presentation.
- ☐ Presentation must be reviewed by guide.
- ☐ Presentation template include minimum following things :
  - ☐ Project title, team member names, enrolment numbers, guide name
  - ☐ System process flow
  - ☐ Listing of extended features
  - ☐ Comparative study of current and previous semester system feature
  - ☐ Limitation
  - ☐ Extended System Definition, Objective, Scope, Requirement.
  - ☐ User Reports
  - ☐ Dashboard
  - ☐ System Design

- ☐ Marks weightage of Document and Project presentation-1 are as given below:

Document – 1 Parameters	Marks( 20)	Topics for partial submission from project report
Document flow & formatting	10%	Up to the Activity plan mentioned for Parameter A3.
System implementation	40%	
Data manage on Dashboard	30%	
User Report	20%	

Presentation – 1 Parameters	Marks(30)
System Design	20%
Technical Knowledge	20%
Presentation Skill	10%
Demonstration	30%
Work sufficiency	20%

#### **Final Submission:**

- ☐ After Project Presentation - 2, team shall have to submit spiral bounded copy of project document compulsorily in the prescribed format along with soft copy in CD before the Semester End Presentation with approval of guide and certificates from institute.

#### **Activity Plan:**

- Given plan should be followed by guide and students in this semester to complete the project work smoothly for determined objectives:

Sr. No	Activity	CO mapped	Skill set Mapped	Week	Responsible person	Assessment Mapped
1	New template integration in 4 <sup>th</sup> Semester Project	CO1	Thinking , Inquiry Skill	1 and 2	Project committee	
2	Work on Extended project requirement and session by Project committee	CO1		3	Project committee	
3	Extended Project Requirement Document Submission : <input type="checkbox"/> Team must submit the document for the approval of the extended requirements from Project committee in following format : <ul style="list-style-type: none"> <li>• Purpose</li> <li>• Previous semester project functionalities</li> <li>• Extension points with description for current semester project</li> <li>• Comparison between current semester and previous semester functionalities</li> <li>• Tools and technology selected for current semester's project</li> <li>• Any customization for the project.</li> </ul>	CO1, CO7	Major skill: Writing Skill: Narrative  Associated skill: Understanding and Reading	4	Guide and co-guide	<b>A1</b>
4	Phase wise timeline task and duration determining for extended version of project. The team needs to submit timeline for the same.	CO1 , CO7	Major skill: Writing Skill: Narrative  Associated skill: Understanding , Reading , Thinking	4	Student and Guide	<b>A2</b>
5	Extended requirement documentation. After the approval of the extended requirements from guide and Project committee. Team must document the requirements : <input type="checkbox"/> Previous semester project detail <ul style="list-style-type: none"> <li>○ Scope</li> </ul>	CO1, CO7	Major skill: Writing Skill: Narrative  Associated skill:	4	Guide	



	<ul style="list-style-type: none"><li>○ Tools and Technology</li><li>○ Functional and Non- functional requirement</li><li>○ User characteristics</li><li><input type="checkbox"/> Proposed system detail<ul style="list-style-type: none"><li>○ System outline</li><li>○ Purpose</li><li>○ Scope</li><li>○ Tools and Technology</li><li>○ Functional and Non- functional requirement</li><li>○ Exciting functionalities</li><li>○ User characteristics</li><li>○ Data Dictionary, integrity constraints</li><li>○ Summary about expected functionality and Exciting functionality</li></ul></li></ul>		Reading , Understand ing , Learning , Technical											
6	<p>Implementation of Extended functionalities and its Design preparation</p> <ul style="list-style-type: none"><li>○ Use case diagram</li><li>○ Activity diagram</li><li>○ GUI Design (Functionality wise)</li><li>○ Traversals [in hierarchical format]</li><li>○ User interface screenshots Screen image with caption</li></ul> <table border="1"><thead><tr><th colspan="2">Description</th></tr></thead><tbody><tr><td>Data From</td><td>Table , End User , Remote Server or others</td></tr><tr><td>Data To</td><td>Table , End User , Remote Server or others</td></tr><tr><td>Critical Validations</td><td>Describe and/or used regular expression</td></tr></tbody></table> <ul style="list-style-type: none"><li>○ Summary - Functionality wise total pages and No. of validations (Built-in , customized)</li></ul>	Description		Data From	Table , End User , Remote Server or others	Data To	Table , End User , Remote Server or others	Critical Validations	Describe and/or used regular expression	CO2, CO3, CO4	Major skill: Writing Skill: Narrative  Associated skill: Reading , Understand	5	Guide	
Description														
Data From	Table , End User , Remote Server or others													
Data To	Table , End User , Remote Server or others													
Critical Validations	Describe and/or used regular expression													
7	<p>The team needs to document the codes Specification with following details.</p> <ul style="list-style-type: none"><li><input type="checkbox"/> Customized Coding standard followed for development</li><li><input type="checkbox"/> Critical code for distinct functionality with justification</li><li><input type="checkbox"/> Webpage code must not execute</li></ul>	CO2, CO3, CO4	Major skill: Writing Skill: Narrative  Associated skill:	6-8	Guide									

	<p>any DDL or DML statements directly. Instead appropriate methods/properties must be designed.</p> <p><input type="checkbox"/> Framework used in system</p> <p>May refer provided link for reference:</p> <p><b>Coding Convention</b></p> <ul style="list-style-type: none"><li>• <a href="https://www.php-fig.org/psr/psr-2/">https://www.php-fig.org/psr/psr-2/</a></li><li>• <a href="https://docs.microsoft.com/en-us/dotnet/csharp/programming-guide/inside-a-program/coding-conventions">https://docs.microsoft.com/en-us/dotnet/csharp/programming-guide/inside-a-program/coding-conventions</a></li></ul> <p><b>General Framework structure :</b></p> <ul style="list-style-type: none"><li>• <a href="https://www.apphp.com/php-framework/examples/docs/index.php?page=framework-structure">https://www.apphp.com/php-framework/examples/docs/index.php?page=framework-structure</a></li><li>• <a href="https://docs.microsoft.com/en-us/dotnet/standard/design-guidelines/">https://docs.microsoft.com/en-us/dotnet/standard/design-guidelines/</a></li><li>• Development – File structure for standard application</li><li>• <a href="https://www.apphp.com/php-framework/examples/docs/index.php?page=file-structure">https://www.apphp.com/php-framework/examples/docs/index.php?page=file-structure</a></li></ul> <p><input type="checkbox"/> List and describe used APIs, libraries, plug-ins, web services and algorithms used for Enriching the project.</p> <p><input type="checkbox"/> Summary as Line of Code for whole project</p>		Reading , Understand ing , Learning , Technical																			
8	<p>Implementation of User wise Reports and Dashboard with following details :</p> <p><input type="checkbox"/> <b>Dashboard View</b></p> <p>Image with caption</p> <table><tr><td>View-1 Name</td><td></td></tr><tr><td>Description</td><td></td></tr><tr><td>Data From</td><td>Table , End User , Remote Server or others</td></tr><tr><td>Data To</td><td>Username</td></tr><tr><td>View-2 Name</td><td></td></tr><tr><td>Description</td><td></td></tr><tr><td>Data From</td><td>Table , End User , Remote Server or others</td></tr><tr><td>Data To</td><td>Username</td></tr></table> <p><input type="checkbox"/> <b>User wise TPS/MIS/DSS Reports</b></p> <p>Image with caption</p>	View-1 Name		Description		Data From	Table , End User , Remote Server or others	Data To	Username	View-2 Name		Description		Data From	Table , End User , Remote Server or others	Data To	Username	CO4	Major skill: Writing Skill: Narrative  Associated skill: Reading , Understand ing , Learning , Technical	9	Student	
View-1 Name																						
Description																						
Data From	Table , End User , Remote Server or others																					
Data To	Username																					
View-2 Name																						
Description																						
Data From	Table , End User , Remote Server or others																					
Data To	Username																					

	Report-1 Description	Filtered / General Reports [i.e. General reports like Show Popular products. Filtered reports like show popular products with maximum discount.]					
	Input						
	Process						
	Output						
	Usage for whom and how?	Must be in well description.					
	<input type="checkbox"/> Summary [No. of Reports user wise]						
9	The team needs to test extended functionality with specified tool for particular types and include following detail in a document. <input type="checkbox"/> Project Testing : Evaluation methods <input type="checkbox"/> Used testing Tool specification <input type="checkbox"/> Automated Testing Name of Functionality Image of tested functionality Test Case Report <input type="checkbox"/> Test case Reports for Functional Testing, Usability Testing , Interface Testing , Database Testing , Dataflow and Control flow Testing <input type="checkbox"/> Summary [No. of Test Cases for each types]		CO5	Major skill: Writing Skill: Narrative  Associated skill: Reading , Understanding , Learning , Technical	10-11	Guide	A3- Document and Project presentation – 1
10	System validation testing for whole system.		CO1 – CO7	Major skill: Writing Skill: Narrative  Associated skill: Reading , Understanding , Learning , Technical	11-12	Guide	

11	<p>Final spiral bound submission by team.</p> <ul style="list-style-type: none"> <li>• The team needs to verify the document from guide and co-guide along with their signature to project committee.</li> <li>• The spiral bound contains full documentation along with CD.</li> <li>• The CD contains all necessary files related to the project.</li> </ul>	CO1 CO2, CO3, CO4, CO5, CO6	<p>Major skill: Writing Skill: Narrative</p> <p>Associated skill: Reading</p> <p>Major skill: Collaborative Skill</p> <p>Associated skill: Communication</p>	13	Student	A4 – Semester End Presentation
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**Project Document Format:** Project Document Report must cover at least following content but should not be limited to it:

1. **Title Page**
2. **Project Certification Form(From Institute)**  
[The Institute certificate should be duly filled signed by project guide and program coordinator.]
3. **Declaration certificate**  
[A self-declaration regarding work originality and non-plagiarism. Declaration certificate format is given below.]
4. **Work sufficiency certificate**  
[A self-declaration regarding work justification according to the determined objectives and duration. Work sufficiency certificate format is given below.]
5. **Acknowledgement**  
[All persons (e.g. guide technician, friends, and relatives) and organization/authorities who/which have helped in the understanding of the project shall be acknowledged.]
6. **Table of contents with page numbering**
7. **List of Tables, Figures, Schemes**
8. **Chapters of project work execution**
9. **Future scope in detail**
10. **Learning during project work**
11. **References [List the references related to tools/technology, coding and testing.]**
12. **Glossary of Terms**

\*Note: Enrichment is preferred in above specification on the basis of nature of the project.

**Guideline for Report Formatting:**

- ☐ Use A4 size page with 1" margin all sides.
- ☐ Header should include Project title and footer should contain page number and enrollment numbers.
- ☐ Chapter Name should be of Cambria font, 20 points, Bold.
- ☐ Main Heading should be of Cambria font, 16 points, Bold.
- ☐ Sub Heading should be of Cambria font, 12 points, Bold.
- ☐ Sub heading of sub heading should be of Cambria font, 12 points, Bold, Italic.
- ☐ Paragraph should be of Cambria font, 12 points.
- ☐ Line spacing - 1.5 lines, before - 0, after - 0.
- ☐ No chapter number for references.
- ☐ Before chapter 1, give page number in roman letter (Title Page, Project Certification Form, Acknowledgements, Table of Contents/Index with page numbering, List of Tables, Figures, Schemes and Summary/abstract of the project work).

**Front Page Format:** Each project document must have front page as follows:

# PROJECT

«TITLE IN CAPITAL LETTERS»

Submitted By,

«Student's Name (Enrollment Number)»,

«Student's Name (Enrollment Number)»

Guided By,

«Guide Name»

for partial fulfillment of the requirements  
for the Degree of Bachelor of Computer Application

B.V.Patel Institute of Computer Science,

Uka Tarsadia University.

«Month», 2023.

**Declaration Certificate:** Each project document must have declaration certificate page as follows:

## DECLARATION

We hereby declare that the project titled “<<*Project Title*>>“is fully implemented by us. It is neither paid nor copied. Even though, later on, in case of any infringement found for this project work, we are solely responsible for the same and understand that as per UGC norms, the University can revoke the degree conferred to us.

Enrollment No	Name	Signature

**Work Sufficiency Certificate:** Each project document must have work sufficiency certificate page as follows:

## **Work Sufficiency Certificate**

As a guide, I assure you that the project work presented by the team is sufficient and qualitative according to the specified time duration and team size.

<b>Guide Name</b>	<b>Signature</b>