Pokhara University Faculty of Science and Technology	
Course Code: PRJ 451 (5 Credits)	Full Marks: 100
Course Title: Project IV	Pass Marks: 45
Nature of the Course: Theory/Practical	Total Lectures: 80 hours
Level: Bachelor | Year: IV / Semester: VIII	Program: Bachelor of Computer Application

1. Course Description:

Project-III is a hands-on, practical course designed for BCA sixth-semester students. It focuses on the development of web application or data analysis tool. The project should be original and reflective of the students' skillset in software development or data analysis. The course encourages students to apply their knowledge in creating a functional web application or performing data analysis to solve a real-world problem. Students may work independently or in small teams to develop a web tool, data analysis system, or any other software project of interest. Guided by a faculty supervisor, the course helps students explore and manage various stages of the software or data lifecycle. Project III offers students exposure to the practical side of development, testing, and documentation.

2. General Objectives:

- To empower students to apply the knowledge and skills gained throughout the BCA program to create a practical software application.
- To encourage students to think critically and solve problems creatively as they work on their projects.
- To help students develop essential project management, teamwork, and communication skills that are crucial for their future careers.
- To enable students to produce a functional, user-friendly, and well-documented software application that meets specific needs.
- To provide students with hands-on experience in every phase of project development, from planning and design to implementation and testing.
- To provide students knowledge about the API and how it is implemented on mobile or web projects.

3. Procedure:

The Project IV is focused to develop web or mobile application for event management; data analysis project that identifies trends from social media data; an interactive tool for financial planning or budgeting; dashboard for visualizing data and providing analytics.

- It is suggested to develop an application using emerging frameworks for web platform and use Android platform for mobile application.
- It is recommended that the team should be of 2-3 students. Teams cannot exceed 3 members to ensure effective collaboration and manageability.
- The project should be free from plagiarism of any kind. Students are expected to produce their own work and properly attribute any external resources or inspiration.
- Coding standards should be followed meticulously. At the minimum, the code should be self-documented, modular, and should use the meaningful naming convention.
- It is advisable that object-oriented methodology is used with reusability of classes and code, etc.
- Mentor/ Internal guides (i.e. the faculty members) must devote time, allocated as per the time table to guide the students for the project. The time allocation will be in accordance with the teaching scheme for 4th semester project.

4. Project Phases:

The entire project work shall be divided into three phases and evaluation shall be done accordingly:

5. Project Milestone

The schedule can be given to the students according to the following phases.

VII. Team formation (Week 1)

- Students will form a team consisting of a maximum of 3 members based on their interests and skills.
- Teams should be balanced to ensure diverse skill sets and effective collaboration.

VIII. Project Proposal Submission: (Week 2-4)

- Students will start by defining the project's scope, objectives, and deliverables.
- A detailed project proposal must be submitted, outlining the project idea, timeline, and required resources.

Proposal Format:

1. Introduction
2. Aim and Scope
3. Objectives
4. Study of the Previous Systems
5. Current Problem and Proposed Solution
6. High level requirements
   - 6.1 Functional
   - 6.2 Non functional
   - 6.3 Requirement prioritization table
7. Design
   - 7.1 ER Diagram
   - 7.2 Use case Diagram
   - 7.3 DFD
   - 7.4 UML Class Diagram
8. Detail Budget
   - 8.1 Detail Budget
   - 8.2 Budget Breakdown
9. Detail Timeline
10. Conclusion
11. References

IX. UI/UX Design (Week 5-6)

- Students should begin by gathering user stories to understand the needs, goals, and pain points of potential users. These user stories will guide the design and development of the user interface and user experience, ensuring the final product meets the end users' expectations.
- Collect at least three user story for each page.
- User Interface designed with any UI/UX Design tool.
- Present and defend the UI/UX design.

X. First Milestone (Week 7-8)

- Students should present their project progress. At this stage 60% of the work should be completed.

XI. Second Milestone (Week 9)

- Students should present their project progress. At this stage 100% of the work should be completed.

XII. Final Defense (Week 10)

- Final Project demonstration/presentation with documentation.
- The final defense includes a demonstration of the project, focusing on both functionality and documentation quality.

7 Guidelines for Project using Framework

8 Report format:

Title Page
Student Declaration
Supervisor Acceptance
Approval Certificate
Acknowledgement
Abstract
List of Abbreviations
Table of Figures
List of Tables
Table of Contents

CHAPTER 1: INTRODUCTION
- 1.1 Background
- 1.2 Objectives
- 1.3 Purpose, Scope, and Applicability
  - 1.3.1 Purpose
  - 1.3.2 Scope
  - 1.3.3 Applicability
- 1.4 Achievements
- 1.5 Organization of Report

CHAPTER 2: SURVEY OF TECHNOLOGIES
- Review of the similar/relevant projects

CHAPTER 3: REQUIREMENTS AND ANALYSIS
- 3.1 Problem Definition
- 3.2 Requirements Specification
- 3.3 Planning and Scheduling
- 3.4 Software and Hardware Requirements
- 3.5 Preliminary Product Description
- 3.6 Conceptual Models

CHAPTER 4: DESIGN
- 4.1 Introduction
- 4.2 System Design
- 4.3 Database design
- 4.4 Interface Design
- 4.5 Summary

CHAPTER 5: IMPLEMENTATION AND TESTING
- 5.1 Implementation Approaches
- 5.2 Coding Details and Code Efficiency
  - 5.2.1 Code Efficiency
- 5.3 Testing Approach
  - 5.3.1 Unit Testing
  - 5.3.2 Integrated Testing
  - 5.3.3 Beta Testing
- 5.4 Modifications and Improvements
- 5.5 Test Cases

CHAPTER 6: RESULTS AND DISCUSSION
- 6.1 Test Reports
- 6.2 User Documentation

CHAPTER 7: CONCLUSIONS
- 7.1 Conclusion
  - 7.1.1 Significance of the System

7.2 Limitations of the System
7.3 Future Scope of the Project

REFERANCES

Note: *3 copies of the hard bind report should be submitted to the department of computer application with proper binding. The report should be approved and signed by an external, internal examiner and head of department.*