**CS3811 – PROJECT WORK**

**Anna University – Regulation 2021**  
**Semester: 8 | Department: Computer Science and Engineering**  
**Course Code: CS3811**

1. **COURSE OBJECTIVES**

* To provide practical exposure to real-world software/hardware development.
* To enhance critical thinking, design skills, and problem-solving ability.
* To encourage students to apply core concepts learned throughout the program.
* To build communication and teamwork skills through documentation and reviews.

1. **COURSE OUTCOME**

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

* Design and implement a software/hardware project to meet desired needs.
* Use modern tools and methodologies to develop and evaluate solutions.
* Prepare comprehensive documentation with technical clarity.
* Present project findings effectively with confidence.

1. **PROJECT TYPES**

* **Industry-Based Project** – Internship in a company with a report based on assigned tasks and solutions.
* **Product-Based Project** – Development of web/mobile/desktop-based applications solving real-time problems.
* **Research-Based Project** – Study and implementation of innovative algorithms/techniques.
* **Hybrid Projects** – Combination of hardware & software, IoT, AI-ML systems, etc.

1. **FORMAT OF FINAL REPORT**

* **Basic Structure**

1. Title Page
2. Bonafide Certificate
3. Acknowledgment
4. Abstract
5. Table of Contents
6. List of Tables
7. List of Figures
8. Chapters (1 to 7)
9. References
10. Appendices

**CHAPTER 1: INTRODUCTION (5-6 Pages)**

**1.1 Background of the Study**

Introduce the context of the problem. Discuss the real-world need or opportunity for your solution.

**1.2 Problem Statement**

Describe the specific issue being addressed. What is lacking in existing systems?

**1.3 Objectives of the Project**

List 4–6 clear, measurable objectives. Example:

* To develop a secure login using face recognition.
* To implement role-based access for college materials.

**1.4 Scope of the Project**

Define the boundaries of your work – what it will and won’t do.

**1.5 Methodology Summary**

Brief description of the framework, tools, and methods.

**1.6 Module Description**

Break the project into modules (e.g., User Registration, Face Detection, Notes Access).

**CHAPTER 2: LITERATURE SURVEY (4–6 Pages)**

**2.1 Review Strategy**

Explain how you chose the papers: keywords used, databases (IEEE, Springer), etc.

**2.2 Summary of 5–10 Papers**

Include:

* Title
* Authors
* Year
* Objective
* Techniques Used
* Advantages and Limitations

*Use a tabular format or paragraph style. Follow IEEE citation style.*

**2.3 Research Gap**

Discuss what previous work lacks and how your project improves upon it.

**CHAPTER 3: SYSTEM ANALYSIS AND DESIGN (5–7 Pages)**

**3.1 Requirement Analysis**

**Functional Requirements:**

* User registration/login
* Admin panel
* Material upload/download

**Non-functional:**

* Performance
* Security
* Compatibility

**3.2 System Design Diagrams**

* **Context Level DFD** – High-level overview
* **Level 1 DFD** – Internal data flow of key processes
* **UML Diagrams**:
  + Use Case Diagram
  + Class Diagram
  + Sequence Diagram
  + Activity Diagram
* **Architecture Diagram** – Layered or MVC-based layout
* **ER Diagram** – If your system uses a relational database

**CHAPTER 4: HARDWARE & SOFTWARE SPECIFICATION (2–3 Pages)**

**4.1 Hardware Requirements**

* Processor: Intel i5/i7 or equivalent
* RAM: Minimum 8GB
* Storage: 250GB HDD or SSD
* Webcam (for face projects)
* GPU (if using deep learning)

**4.2 Software Requirements**

* Operating System: Windows/Linux/macOS
* Frontend: HTML, CSS, JS, Angular/React
* Backend: PHP / Node.js / Python / Java
* Database: MySQL / SQLite / MongoDB
* Frameworks: OpenCV, face-api.js, TensorFlow

**CHAPTER 5: PROJECT IMPLEMENTATION (10–12 Pages)**

**5.1 Module-wise Description**

Explain each module in detail with logic flow and screenshots:

1. **Login & Registration**
2. **Face Detection & Recognition**
3. **Dashboard with Access Control**
4. **Upload / Download Materials**
5. **Admin Panel**

**5.2 Technologies Used**

Explain the libraries, frameworks, APIs used (with code snippets if possible).

**5.3 Implementation Screenshots**

Include:

* UI pages
* Face recognition screen
* Upload form
* Student access view

**CHAPTER 6: TESTING & RESULTS (4–6 Pages)**

**6.1 Testing Methods**

* Unit Testing
* Integration Testing
* System Testing
* User Acceptance Testing (UAT)

**6.2 Test Cases**

Use a tabular format with:

* Test Case ID
* Input
* Expected Output
* Actual Output
* Status (Pass/Fail)

**6.3 Performance Metrics**

* Time taken for face recognition
* Accuracy rate
* Load time for dashboard
* User feedback summary

**6.4 Result Graphs**

* Bar chart comparing module performance
* Pie chart of usage distribution (students/admins)

**CHAPTER 7: CONCLUSION & FUTURE ENHANCEMENT (1–2 Pages)**

**7.1 Conclusion**

Summarize your achievements, modules implemented, objectives fulfilled.

**7.2 Limitations**

Mention current constraints like:

* Limited face dataset
* Works only on desktops

**7.3 Future Enhancements**

* Integrate OTP/email login fallback
* Mobile app version
* Enhanced facial analytics

**REFERENCES (3–4 Pages)**

Follow IEEE format. Use:

* Research papers
* Online tutorials
* Framework documentation
* Books

**APPENDICES**

* Source code (if required)
* Extra diagrams
* Sample data
* Screenshot index
* Deployment instructions