

BCA (System Administration and Cyber Security)
Semester-VI

L-0 T-0 P-36 C-18

25SACS220P: Major Project

Course Objectives

- To solve industrial (or society or research) problems.
- To plan, schedule, and monitor the software project.
- To learn Development, coding, and testing of a large project cohesively.
- To learn Documentation of projects.

Course Outcomes

Students will be able to:

1. Understand fundamental concepts and principles relevant to their project domain.
2. Apply appropriate methodologies and technologies to design and develop a software solution or system addressing a real-world problem or need.
3. Analyze the effectiveness, efficiency, and quality of their software solution through testing, debugging, and optimization processes.
4. Evaluate their knowledge, skills, and experiences to innovate and propose enhancements or extensions to their project, demonstrating creativity and problem-solving abilities.
5. Develop solutions for contemporary problems using modern tools for sustainable development.

Articulation Matrix:-

(Program Articulation Matrix is formed by the strength of the correlation of COs with POs and PSOs. The strength of correlation is indicated as 3 for substantial (high), 2 for moderate (medium) correlation, and 1 for slight (low) correlation)

CO/PO/PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	2	3	1	-	-	-	-	-	-	-	-	-
CO2	-	2	3	1	-	-	-	-	2	-	-	-
CO3	-	1	2	3	-	-	1	-	-	-	-	-
CO4	1	-	2	-	3	-	-	-	-	-	2	1
CO5	-	1	-	2	-	3	-	-	-	-	1	2

High-3 Medium-2 Low-1

Major Project Guidelines

1. The project proposal should be prepared in consultation with your guide. The project proposal should clearly state the project objectives and the environment of the proposed project to be undertaken. The project work should compulsorily include the software development.
2. Synopsis of the project proposal (15-20 pages) covering the following aspects may be Prepared:

- a. Title of the Project
- b. Introduction and Objectives of the Project
- c. Problem Definition, Requirement Specifications (Detailed functional Requirements and Technical Specifications), Project Planning and Scheduling (Gantt chart/PERT chart)
- d. Scope of the solution
- e. Analysis (DFDs, ER Diagrams/Class Diagrams etc. as per the project requirements)
- f. A complete structure which includes:
 - i. Number of modules and their description to provide an estimation of the student's effort on the project
 - ii. Data Structures as per the project requirements for all the modules. Process Logic of each module
 - iii. Implementation methodology
 - iv. List of reports that are likely to be generated
- g. Overall network architecture (if required for your project)
- h. Implementation of security mechanisms at various levels
- i. Future scope and further enhancement of the project
- j. Bibliography

3. Every student, (in a group of maximum two) will be asked to select a particular project listed by the department, on which he/she will have to develop a working module in semesters.

4. Two copies of the original project report in the hard bound form along with the CD (containing the executable file(s) of the project should be enclosed in the last page) is to be submitted to the University.

5. Coding standards should be followed meticulously. At the minimum, the code should be self documented, modular, and should use the meaningful naming convention.

Project Title

A Project Report Submitted to



Mandsaur University, Mandsaur

Towards Partial Fulfillment for the Award of

Name of Program

Submitted By

STUDENT NAME

Enrollment No

Project Title

A

Project Report Submitted to



Mandsaur University, Mandsaur

Towards Partial Fulfillment for the Award of

Name of Program

Submitted To

Submitted By

Project Guide Name

Student Name

Designation

Enrolment No.

*Department of Computer Science & Applications
Mandsaur University, Mandsaur*

CERTIFICATE

The Dissertation entitled "**Project Title**" being submitted by **Student Name** (**Enrollment No.**) has been examined by us and is hereby approved for the award of degree **Program name** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed or conclusion drawn therein, but approve the dissertation only for the purpose for which it has been submitted.

Internal Examiner

Date:

External Examiner

Date:

DISSERTATION APPROVAL SHEET

The dissertation work entitled “Project Title” submitted by Student Name **(Enrollment No.)** is approved as partial fulfillment for the award of the **Program Name** degree by Mandsaur University, Mandsaur (M.P).

Approved by

Head of Department Name
(HOD CA)

DECLARATIONS

I hereby declare that the work, which is being presented in the dissertation, entitled **“Project Title”** partial fulfillment of the requirements for the award of degree of **Program Name** submitted in the **Department of Computer Science & Applications (Mandsaur University, Mandsaur)** is an authentic record of my own work carried under the guidance of **Guide Name**. I have not submitted the matter embodied in this report for award of any other degree.

Student Name

(Enrollment No)

ACKNOWLEDGEMENT

I take the opportunity to express my cordial gratitude to **XYZ**, HOD Department of Computer Science & Application, Mandsaur University, Mandsaur (M.P.) for the valuable guidance and inspiration throughout the dissertation work. I feel thankful for his innovative ideas, which led to successful completion of this work.

I give special thanks to **Prof. ABC**, Assoc. Prof., Department of Computer Science & Application, Mandsaur University, Mandsaur (M.P.) to always being willing to help find solutions to any problems I had with my work.

I would also like to thanks **MNO** Assistant Professor, Department of Computer Science & Application, Mandsaur University, Mandsaur (M.P.) for providing additional guidance and insight into my research work.

I express my gratitude and thanks to all the staff members of Computer Science & Engineering department for their sincere cooperation in furnishing relevant information to complete this dissertation well in time successfully.

Lastly but not least I must express my cordial thank to my parent, family members and friends who gave me the moral support without which it was impossible to complete my project work. With this note I thank everyone for the support.

Student Name

CONTENTS

CHAPTER	PAGE NUMBER
CHAPTER 1: INTRODUCTION	01 - 04
1.1 Aim of Project	01
1.2 Problem Definition	03
1.3 Problem Description	03
1.4 Need and Scope	04
CHAPTER 2: ANALYSIS	05 - 08
2.1 Software Process Model	05
2.2 Advantages of Model	07
2.3 Disadvantages of Model	07
2.4 Product Perspective	08
CHAPTER 3: REQUIREMENT SPECIFICATION	09 - 11
3.1 Requirement Analysis	09
3.2 Software Specifications	10
3.3 Hardware Specifications	10
3.4 Non-Functional Requirements	11
CHAPTER 4: FEASIBILITY ANALYSIS	12 - 13
4.1 Technical Feasibility	12
4.2 Economic Feasibility	12
4.3 Behavioural Feasibility	13
4.4 Time Feasibility	13
CHAPTER 5: RISK ANALYSIS	14 - 17
5.1 Why Risk Management	14
5.2 Risk Projection	15
5.3 Types of Risks	15
5.3.1 Project Risk	15
5.3.2 Technical Risk	16
5.3.3 Business Risk	16

5.4	Known Risk	16
5.5	Predictable Risk	17
5.6	Unpredictable Risk	17
CHAPTER 6: TECHNOLOGY USED		18 - 24
6.1	Selection of Platform	18
6.2	Tool Selection	18
6.3	Database Used	21
CHAPTER 7: PLANNING AND DESIGNING		25 - 57
7.1	Planning	25
7.2	Designing	28
7.3	Entity Relationship Diagram	30
7.4	Data Flow Diagram	37
7.4.1	DFD Level 0	37
7.4.2	DFD Level 1	37
7.4.3	DFD Level 2	39
7.5	Use Case Diagram 1	40
7.5.1	Use Case Diagram 2	41
7.5.2	Use Case Diagram 3	42
7.6	Activity Diagram	45
7.7	Sequence Diagram	53
7.8	Architecture Diagram	56
7.9	Class Diagram	57
CHAPTER 8: IMPLEMENTATION		58 – 66
CHAPTER 9: TESTING		67 - 73
9.1	Unit Testing	67
9.2	Integration Testing	68
9.3	Validation Testing	68
9.4	Test Case Design	68
9.5	Test Cases	71
CHAPTER 10: COST ESTIMATION AND		74 - 78

VERIFICATION CRITERIA

CHAPTER 11: LIMITATIONS OF PROJECT	79
CHAPTER 12: FUTURE SCOPE	80
CHAPTER 13: CONCLUSION	81
CHAPTER 14: BIBLIOGRAPHY/REFERENCES	82

LIST OF TABLES

CHAPTER	PAGE NUMBER
CHAPTER 3	09 - 11
Table 3.1 Table Caption	10
CHAPTER 9	67 - 73
Table 9.1 Table Caption	71
Table 9.2 Table Caption	72
Table 9.3 Table Caption	73
Table 9.4 Table Caption	73
CHAPTER 10	74 - 78
Table 10.1 Table Caption	77

LIST OF FIGURES

CHAPTER	PAGE NUMBER
CHAPTER 2	05 - 08
Figure 2.1 Figure Caption	06
Figure 2.2 Figure Caption	08
CHAPTER 8	58 - 66
Figure 8.1 Figure Caption	58
Figure 8.2 Figure Caption	59
Figure 8.3 Figure Caption	60
Figure 8.4 Figure Caption	61
Figure 8.5 Figure Caption	61
Figure 8.6 Figure Caption	62
Figure 8.7 Figure Caption	62
Figure 8.8 Figure Caption	63

Prepared By

**Academic
Coordinator**

HOD

**Senior Faculty
nominated by
DOAA**