Dr. Babasaheb Ambedkar Open University, Ahmedabad

(Established by Government of Gujarat)

PROJECT GUIDELINES FOR STUDENTS

Programme: (MCA)

Course Type: Software Development Project **Course Code: MCA-401**

Weightage for Project Report:100% **(Project Report:75%, Viva-Voce:25%)**

Course Name: Software Development Project
Course Code: MCA-401

1. Basic Information

Semester	Course Code	Course Name	CP	TYPE
IV	MCA-401	Software Development Project	8	PR

Most professional curricula incorporate a substantial amount of project work. Students are encouraged to apply their innovative ideas to develop solutions that address the needs of the computer applications. The objective of the project report should be to design and develop a practical software solution to a real-world problem using knowledge gained during the MCA program. It aims to implement appropriate technologies and follow standard development practices for a functional, scalable, and user-friendly application/websites. This should be also focuses on enhancing problem-solving, technical, and project management skills. Ultimately, it should demonstrate the student's ability to apply theoretical concepts in a real-world context and deliver a quality software product.

Here's a breakdown of project guidelines for MSc Cybersecurity students:

A. Project Guide Eligibility Criteria:
Full Time Faculties in the Department of Computer Science/ Information Technology of BAOU/ Colleges/ Institutions affiliated to any Indian University recognized by UGC and having minimum 2 years teaching experience.

OR

A person having minimum M. Tech, MCA, M.Sc. in Computer Science/Information Technology from a UGC recognized universities with 4 years' experience in Industry/teaching.

Please note that spouse, direct relatives, and blood relations are not permitted to be the guide.

B. Points to remember while preparing the project proposal

1. The creation of the project report:

The project report should include the following:

(i) An original copy of the project proposal and the approved proforma.
(ii) Originality Certificate
(iii) Project documentation
(iv) Students need to send the project report to the guide via mail and upload the project report on the dedicated drive as well.

The project documentation might consist of between 100 and 125 pages(code not included). The project documentation's specifics shouldn't be overly standardised. It is necessary to properly record your project report, including how you conducted your project's planning, scope definition, reconnaissance, assessment, analysis usage of testing techniques/strategies, etc. To be more precise, whatever theory is presented in the reference books about these areas should be disregarded as much as possible. Only your project should be covered in the project documentation.

3. On A4 paper (just one side), the project report should typically be produced with single line spacing. Numbering is required for all the pages, tables, and figures. Titles should be present in tables and figures.

4. The Regional Centre/Study Centre must receive just one copy of the original project report in bound form and send all the mentioned documents with the project report to the respective mail-id. The student must keep one photocopy of the identical Project Report which must be presented to the examiner during the viva-voce.

5. A Project cannot be submitted as Softcopy only. It is mandatory to mention your Course code, Course Name and type i.e. "**MCA-401**" "**Internship cum Industrial Project"** and **Academic Year** on the first page so sorting will be easier for Regional Centre/Study Centre.

6. Ideally, only one student should be allowed to work on a project at a time. However, if a project is sufficiently extensive that it will take one human year or more to complete, only two students at most may work on it due to the requirement of six human months per student. Prior approval is required in this respect, and it must be acquired from the relevant Project Guide.

7. If two students are permitted to collaborate on a project, their project reports must only list the several modules that they both undertook or worked on independently. The project reports for each student's modules must be submitted separately. Project reports that are wholly similar are not permitted. Only the introduction and, potentially, the conclusion may be identical. In this situation, the preceding suggestion from the project coordinator or project guide must be attached by both students. It is not acceptable to submit a single copy of a project report that combines the work of two or more students. The project may be rejected if these standards are broken.

8. Every stage of the project development should engage the student. The project may be rejected or disqualified at any step if it is discovered that a student was not active in any phase, such as the Analysis phase.

9. Each student has to submit his/her Title of the Project within the first month of the Semester to the Project Guide or Project Coordinator.

10. Title of the project should be kept the same throughout the project.

C. Assessment Guidelines Project Evaluation

1. Viva Voce

Students have the opportunity to showcase their knowledge and skills to the expert in this evaluation component. The student can be asked to present the project demo in addition to questions on the project-related topics and the relevant courses. Additionally, you can be instructed to develop the code for an issue to show off your analysis skills. The student must provide project report while appearing for the viva-voce.

2. Project Evaluation

Viva-voce is compulsory and forms part of evaluation. A student in order to be declared successful in the project must appear in both
(i) Project Evaluation and
(ii) Viva-voce. Pass in both the components is compulsory. If a student submitted the project report as per the schedule and fails to attend viva, her/his Project will remain incomplete and should contact the Regional Centre concerned.

3. Project Scope and Focus

MCA projects should focus on practical software development that solves real-world problems using modern technologies like Java, Python, web or mobile frameworks, and cloud platforms. The scope must include building scalable, modular, and user-friendly applications aligned with industry standards. Projects should enhance key technical skills such as coding, database handling, API integration, and deployment. Emphasis should also be placed on problem-solving, user experience, and real-world applicability.

4. Project Ideas:

- Web-Based System (e.g., E-Commerce Platform)
  To design and develop a responsive web application for small businesses to manage product listings, orders, and customers.
  To implement secure login, role-based access, and order tracking functionalities.

- Android App (e.g., Blood Donation App)
  To build an Android-based mobile application for connecting blood donors and recipients in real time.
  To integrate Firebase for real-time database management and notifications.

- Machine Learning Project (e.g., Disease Prediction)
  To develop a predictive model using supervised learning techniques to detect diabetes based on patient health data.
  To compare the accuracy of decision trees, random forests, and logistic regression.

- Cybersecurity Project (e.g., File Encryption Tool)
  To implement a secure file encryption and decryption tool using AES-256 algorithm.
  To ensure user authentication and file integrity validation.

- Cloud-Based Project (e.g., Online Library System)
  To deploy a scalable online library management system using AWS services like EC2, RDS, and S3. To automate book borrowing, return tracking, and overdue notifications.

5. Project Resources:

- **Faculty Guidance:** Students should seek guidance from faculty members throughout the project lifecycle.
- **Online Resources:** Utilize online resources, such as blogs, forums, and tutorials.
- **Open-Source Tools:** Leverage open-source tools and frameworks.
- **Industry Experts:** Seek advice from industry professionals or IT experts.

D. Project Proposal (Synopsis)

The project proposal or the synopsis is the frame work for carrying out the project. It should be prepared in consultation with Guide. The necessary parts of a project proposal are given in the following form:

- Title of the Project.
- Introduction and Objectives of the Project.
- Project Category.
- Tools, Platform, Hardware and Software Requirement specifications.
- Whether the project is done for any Industry/Client? The Name and

Address of the Industry or Client is to be mentioned.

- Expected output
- Conclusion

E. Application Areas & Related Tools

Applications:
Financial/ Manufacturing/ Multimedia/ Computer Graphics/ Instructional Design/ Database Management System/ Internet/ Intranet/ Computer Networking-Communication Software/ E-Commerce/ TCP/IP Internals/Routing protocols/ Implementation of Switches & Routers/ Image processing,/ Mobile apps development etc..

Core Programming & Development tools

A list of selected area for developing the project work is given below:

Module Area	Key Tools & Tech
Programming Languages	C, C++, Java, Python
Web & Mobile Development	PHP, ASP.NET, Java web, React/Vue/Flutter (likely)
Databases & Analytics	RDBMS, Big Data tools, R programming
Cloud & Networking	AWS/Azure (conceptual), networking tools
AI, ML & Cybersecurity	ML frameworks, cybersecurity suites
Modelling & Software Engineering	UML tools, project management practices

Other Related Tools:

- **Front End / GUI Tools:** PhP, Scripting languages etc.
- **RDBMS/Back End:** Oracle, MYSQL, No SQL, DB2 etc.

- **Languages:** C, C++, Java, VC++, C#, Mat lab, Python, Scilab etc.
- **Internet Technologies :** DHTML, Java script, VB Script, HTML, Java, Active X, SWING, JSP,ASP, PHP, XML, Java Beans, Java Servlets, CSS, VB.Net, AWT, J2EE.
- **Networking Technologies:** ATM, Frame Relay, TCP/IP, SNMP, GSM, VoIP, PPP, IP-PSTN, SONET/SDH
- **Wireless Technologies:** Bluetooth, 3G, ISDN, EDGE
- **Operating Systems:** Windows/ DOS / UNIX / Linux /Android.

F. Type of Project can be elect

Learner may choose any topics according to Master of Science - Information Technology standards.

Most of the project work falls under the following types

a. Database oriented (e.g. payroll system, Loan management system etc.)
b. Application oriented (e.g. Mobile apps development, web baseddevelopment)
c. R & D project (e.g. Image processing, speech processing, data mining,networking etc.)

G. Project Proposal (Synopsis)

The project proposal or the synopsis is the frame work for carrying out the project. It should be prepared in consultation with Guide. The necessary parts of a project proposal are given in the following form:

- Title of the Project.
- Introduction and Objectives of the Project.
- Project Category (RDBMS/ Application/ R & D).
- Tools, Platform, Hardware and Software Requirement specifications.
- Whether the project is done for any Industry/Client? The Name and Address of the Industry or Client is to be mentioned.
- Methodology
- Expected output
- Conclusion

H. The following suggested Guidelines must be followed in preparing the project Reports

Good quality white A4 size Paper should be used for project Report

Binding Specification: Spiral Binding

Page Specification:

Left margin: 3.0 cm	Right margin: 2.0 cm
Top margin: 2.55 cm	Bottom margin: 2.55 cm

- **Page numbers -** All Report page should be numbered at the bottom Centre of the pages.
- **Normal Body Text:** Font Size: 12, Time New Roman, justified.
- **Paragraph heading font Size:** 14, Times New Roman, Left Aligned.
- **Chapter Heading Font Size:** 20, Times New Roman
- **Coding Font size:** 10, Courier New, Normal(If available)

The Project Report should include:

- One hard Copy of the Project Report
- Soft copy of Project must be Sent and Upload to Mail and Drive.
- The Project may be between **100 and 125 pages** (excluding coding)

J. Software Project Report Guideline

The Project report should have prepared in well-structured preferably typed in Latex. Depending on the type of project the report should be as follows:

Acknowledgement
Content with page number
Declaration Certificate from Guide

Chapter-1: Introduction

1.1 Brief idea about the project
1.2 Objective of the project
1.3 Scope of the project
1.4 Existing system
1.5 Proposed System
1.6 Platform used (Hardware & Software)
1.7 Project location

Chapter-2: Requirement Analysis

2.1 Introduction
2.2 Tools used for Requirement gathering
2.3 Problem in Existing System
2.4 Conclusion

Chapter-3: Logical Design

3.1 Introduction
3.2 DFD (0th, 1st, 2nd level)
3.3 ER diagram
3.4 Use case diagram
3.5 Activity diagram
3.6 Conclusion

Chapter-4: Physical Design

4.1 Introduction
4.2 Database Design (Give your normalized database here)
4.3 Module design
4.4 Input/output design
4.5 Conclusion

Chapter-5: Implementation

5.1 Introduction
5.2 Process description (if any)
5.3 Output & Report
5.4 Conclusion

Chapter-6: Testing

Certificate of Originality from the Guide

This is to certify that the project report entitled
……
…… submitted to
Dr. Babasaheb Ambedkar Open University in partial fulfilment of the requirement for the award of the degree of **Master of Computer Applications,** is an original work carried out by
Mr./ Ms. ……..
Enrolment No.: ……. under the supervision of Mr./Mr./Ms. ……
…….
The matter embodied in this project is a genuine work done by the learner and has not been submitted either to this University or to any other University/Institute for the fulfilment of the requirement of any course of study.

Signature of the Learner:	Signature of the Guide:
Name:	Name:
Address:	Designation:
Enrolment No.:	Address:
Date:	Date:

Format of the Software Project Report

A Project Report on Title of the Project

In fulfillment of the requirement for the 4th Semester of Master of Computer Application Programme

Submitted by

.....
(Name of the Learner)

Enrollment No.: .....

Session: .....

Under the Guidance of

.....
(Name of the Project Guide)

Learner Support Centre

.....
(Name of the Learner Support Centre)

.....
(Location)