

Paper-XVI

**MASTER IN COMPUTER APPLICATIONS
(MCA)**

**Paper-XVI
PROJECT GUIDELINES
For
MCA Part II**



**SCHOOL OF COMPUTER EDUCATION & INFORMATION TECHNOLOGY
NALANDA OPEN UNIVERSITY
WARD No.-11, NALANDA - 803111**

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MESSAGE FROM THE CO-ORDINATOR

The Master in Computer Application (MCA) programme prepares the students to take up positions as Programmers, Systems Analysts, and Systems Designers in the field related to computer science and information technology or students may go for higher studies in this area.

This project work is kept in MCA program to give you opportunity to develop quality software solution. During the development of the project you should involve in all the stages of the software development life cycle (SDLC) like, requirements analysis, systems design, software development/coding, testing and documentation with an overall emphasis on the development of reliable software systems. The primary emphasis of the project work is to understand and gain the knowledge of the principles of software engineering practices, and develops good understanding of SDLC.

Students should take this project work very seriously. Topics selected, should be complex and large enough to justify as a MCA project. The project should be genuine and original in nature and should not be copied from anywhere else. If found copied, the project report will be forwarded to the Registrar (Exam) of the University as an Unfair means case for necessary action. Students should strictly follow and adhere to the CS-76 project guidelines.

I wish you all the success.

Dr. Amar Nath Pandey
Co-ordinator
School of Computer Science& Information Technology
Email: amarnathpandey@nou.ac.in

MCA Part II
Important dates regarding project submission and examination (Paper XVI)

<i>Sl.No.</i>	<i>Topic</i>	<i>Date</i>
1.	Last Date for Submission of the Project Report (one copy) in bound form & One Softcopy by speed post to: The Registrar(Exam), Nalanda Open University, Ward No-11, Nalanda-803111	10th June 2023
2.	Viva-Voce to be conducted	Will be informed during the Theory Examination

Please retain the receipt of Speed Post with you and produce it when asked for.



**SCHOOL OF COMPUTER EDUCATION AND INFORMATION TECHNOLOGY
NALANDA OPEN UNIVERSITY, WARD NO-11, NALANDA – 803111**

**PROFORMA OF MCA PROJECT PROPOSAL (Paper-XVI)
(Project's Title and Guide Details)**

Enrolment No.:

E-mail:

Telephone No.:

1. Name and Address of the student

.....

.....

2. Title of the Project

3. Name and Address of the Guide

.....

.....

4. Qualification of the Guide
(Attach bio-data also)

Ph.D/M.Phil.	M.Tech.	MCA	Any other
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Note: All the above mentioned Degrees must have been awarded in Computer Science/IT only

5. Industrial / Teaching experience of the Guide (in Years)

6. Software Used

(Note : Use of Visual Basic and MS-Access as Front End and Back End respectively is forbidden. But, you are permitted to use Visual Basic with other Software. Also, you can use MS-Access with other software)

Signature of the Student

Signature of the Guide

Date:

Date:

**Important: 1. Attach this Proforma along with Guide's Bio-data and Project Synopsis in the Project Report.
2. Not more than one student is permitted to work on a project.**

Ensure that you include the following while submitting the Project Proposal:

- 1. Proforma for Approval of Project Proposal duly filled and signed by both the student and the Project Guide with date.**
- 2. Bio-data of the project guide with her/his signature and date.**
- 3. Synopsis of the project proposal.**

A photocopy of the complete Project Proposal (along with Project Proforma, Project Synopsis, Biodata of the guide) submitted to The Registrar (Exam), Nalanda Open University should be retained by the student for future reference.



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GUIDELINES FOR PROJECT FORMULATION

The project work constitutes a major component in most of the professional programmes and it is to be carried out with due care and should be executed with seriousness by the candidates.

TYPE OF PROJECT

As majority of the students are expected to work out a real life project in some industry/research and development laboratories/educational institutions/software companies, it is suggested that the project is to be chosen which should have some direct relevance in day-to-day activities of the candidates in his/her institution. Students are encouraged to work in the areas listed at the end. However, it is not mandatory for a student to work on a real life project. The student can formulate a project problem with the help of Guide.

PROJECT PROPOSAL (SYNOPSIS)

PROPOSAL FORMULATION

The project proposal should be prepared in **consultation with the guide**. The project proposal should clearly state the objectives and environment of the proposed project to be undertaken. Ensure that the project that will be done by you will involve all the phases as mentioned in Section IV of the MCA Project Guidelines. It should have full details in the following form:

1. Title of the Project
2. Objectives of the Project
3. Input to the Project
4. Output of the Project
5. Process Logic (You should write a note on the process of arriving from Input to the Output)
6. Limitations of the Project
7. Tools/Platforms, Languages to be used (Also, mention the reasons for proposing to use them)
8. Are you doing this project for any Industry/Client? Mention Yes/No. If Yes, Mention the Name and Address of the Industry or Client
9. Scope of Future Application.

ELIGIBILITY OF PROJECT GUIDE

A person having **Ph.D./M.Tech./M.Phil. (Computer Science) OR MCA** with minimum 1 year experience in Industry / Teaching

PROJECT PROPOSAL SUBMISSION

After finalising the topic and the selection of the guide, students should send the Project Proposal Proforma given on page no. 5-6 along with the synopsis and bio-data of the guide to The Registrar (Exam), Nalanda Open University, Ward No-11, Nalanda – 803111. Incomplete project proposals in any respect will be summarily rejected.

PROJECT REPORT FORMULATION

ITEMS TO BE INCLUDED IN THE PROJECT REPORT

The following items should be included in the Project Report:

1. The project report must contain the following:
 - ◆ Introduction
 - ◆ Objectives
 - ◆ Tools/Environment Used
 - ◆ Analysis Document (This should include SRS in proper structure based on Software Engineering concepts, E-R diagrams/Class diagrams/any related diagrams (if the former are not applicable), Data flow diagrams/other similar diagrams (if the former is not applicable), Data dictionary)
 - ◆ Design Document (Modularisation details, Data integrity & constraints including database design, Procedural design, User interface design)
 - ◆ Program code (Complete code (well indented)/Detailed specification instead of code*, Comments & Description. The program code should always be developed in such a way that it includes complete error handling, passing of parameters as required, placement of procedure/function statements as needed.)
 - ◆ Testing (Test case designs are to be included separately for Unit testing, Integration testing, System testing; Reports of the outcome of Unit testing, Integration testing, System testing are to be included separately. Also, details of debugging and code improvement are to be included.)
 - ◆ Input and Output Screens
 - ◆ Implementation of Security for the Software developed (In case, you have set up a User Name and Password for your software, you should ensure the security of User Name and Password during transmission to server)
 - ◆ Limitations of the Project
 - ◆ Future Application of the Project
 - ◆ Bibliography

Note: Students who have done their project for any organisation are permitted to attach detailed algorithm/specification instead of code, in case, the organisation doesn't permit them to attach the code. Student needs to attach letter in the project report from the Project Manager of the project in the organisation that they are not permitting student to attach the code. In the absence of such letter, the student needs to attach the code compulsorily.

The project report should be hard bound; should consist of a **Contents** page; all pages of report should be numbered; content should be well organized in a meaningful manner; printouts of text & screen layouts should be original and should not be Xeroxed)

2. **Original copy of the Project Proposal Proforma, Synopsis and Guide's Bio-data**
3. **Certificate of Originality (Format given on page no. 15).**
4. The Project Report may be about 50 to 80 double spaced A-4 size typed pages (excluding program code). However, 10% variation on either side is permissible.

SUBMISSION OF PROJECT REPORT

Only one copy of the project report is to be submitted to the following address by speed post: **Registrar (Exam), Nalanda Open University, Ward No-11, Nalanda-803111** by the date mentioned in the Calendar for the project (refer to page-4).

TYPE OF PROJECT

The majority of the students are expected to work on a real-life project preferably in some industry/ Research and Development Laboratories / Educational Institution / Software Company. Students are encouraged to work in the areas listed at the end (Refer page no.13-14). However, it is ***not mandatory*** for a student to work on a real-life project. The student can formulate a project problem with the help of her/his Guide and submit the project proposal of the same. If approved, the student can commence working on it and complete it.

PROJECT EVALUATION

The **Project Report** is evaluated for 80 marks and the **Viva-voce** is for 20 marks. To be declared successful, the student should secure at least 33% marks collectively in both project report evaluation and viva-voce. Always, ensure that the MCA project guidelines are followed.

Unfair cases of copied versions of the project synopsis and project reports will be sent to Unfair Means Committee of University for action.

IMPORTANT POINTS WHILE PREPARING THE PROJECT REPORT
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1. The Project Report should be submitted in A-4 size typed in double space. The Project Report should be hard bound. One **softcopy** of the project is also to be submitted along with hardcopy.
2. Ensure that it contains the following:
 - Project Proposal Proforma. All the items should be filled. The signatures of both student and guide should be present.
 - Project Synopsis. Both guide and student should sign on the Project Synopsis.
 - Guide's Bio-data. The Bio-data should consist of signature of the Guide.
 - Certificate of Originality (Format given on Page no.12)
 - All signatures should be accompanied by the date of signature.

It should include all items mentioned in Section IV.

3. **If any project report is received in the absence of the items listed above, it will be rejected and returned to students for compliance. Also, violation of Project Guidelines may lead to rejection of the Project .**
4. **Only One hard bound original copy and one softcopy** of the project report is to be submitted to **'The Registrar (Exam), Nalanda Open University, Ward No-11, Nalanda-803111** by speed post. **One copy of the same Project Report is to be retained with the student and the student is supposed to carry his copy while appearing for viva-voce. Spiral Binding of Project Report is not permitted.**
5. Xerox copy of the project report is not acceptable.

6. Not more than one student is permitted to work on a Project.
7. If the title of the Project differs from the title mentioned in the Project Proposal, the Project Report will be rejected and will be returned back to the student.
8. Kindly mention on the top of the envelope “**MCA PROJECT REPORT (Paper-XVI)**”. This will facilitate sorting out project reports.
9. The envelope containing the remuneration form for the Project Guide duly signed by the Guide and the student, should be sent to “Registrar (Exam), Nalanda Open University, Ward No-11, Nalanda-803111”
10. In case, students require any letter from the University for doing a project in any organisation, they may request the Registrar (Exam) of the University for the issuance of the same in the format indicated under **Project Trainee** in this document. (Refer to Page number : 16).

LIST OF BROAD AREAS OF APPLICATION AND RELATED TOOLS

FRONT END / GUI Tools	: Visual Basic, Power Builder, X-Windows (X/lib, X/motif, X/Intrinsic), Oracle, VC++, Jbuilder, .Net, PHP, Java Script, Python and any other latest platform
RDBMS/BACK END	: Oracle, Ingres, Sybase, Progress, SQL Plus, MY SQL, SQL Server, DB2
LANGUAGES	: C, C++, Java, VC++, C# and any other latest technology
SCRIPTING LANGUAGES	: PERL, SHELL Scripts(Unix)
RDBMS/BACK END	: Oracle, Ingres, Sybase, Progress, SQL Plus, Versant, MY SQL, SQL Server, DB2
MIDDLE WARE (COMPONENT) TECHNOLOGIES	COM/DCOM, Active-X, EJB, Rational Rose, MSMQ, BEA, Message Q, MTS, CICS
UNIX INTERNALS	: Device Drivers, Pipes, RPC, Threads, Sockets
ARCHITECTURAL CONCEPTS	: CORBA, TUXEDO
INTERNET TECHNOLOGIES	: DHTML, Java script, VB Script, Perl & CGI script, HTML, Java, Active X, RMI, CORBA, SWING, JSP, ASP, XML, EJB, Java Beans, Java Servlets, Visual Age for JAVA, UML, VRML, WML, iPlanet, ATG, BigTalk, CSS, XSL, Oracle ASP server, VB.Net, AWT, J2EE, LDAP, ColdFusion
NETWORKING TECHNOLOGIES	: ATM, Frame Relay, TCP/IP, SNMP, GSM, VoIP, PPP, IP-PSTN, SONET/SDH
WIRELESS TECHNOLOGIES	: Blue Tooth, 3G, ISDN, EDGE
REALTIME OPERATING SYSTEM/ EMBEDDED SKILLS	: QNX, LINUX, OSEK, DSP, VRTX, RTXC, Nucleus
OPERATING SYSTEMS	: WINDOWS, LINUX, IRIX, SUN SOLARIS, HP/UX, PSOS, VxWorks, AS400, AIX
APPLICATIONS	: Financial/ Manufacturing/ Multimedia/ Computer Graphics/ Instructional Design/ Database Management System/ Internet/ Intranet/ Computer Networking-Communication Software/E-Commerce/ ERP / MRP/ TCP/IP Internals/ Routing protocols/ Socket Programming/ Implementation of Switches & Routers/ Artificial Intelligence/ Machine Learning

CERTIFICATE OF ORIGINALITY

This is to certify that the project report entitled _____
Submitted to **Nalanda Open University, Nalanda** in partial fulfilment of the requirement
for the award of the degree of **MASTER IN COMPUTER APPLICATIONS (MCA)**, is
an original work carried out by Mr./ Ms. _____
Enrolment No.: _____ under the guidance of Mr./ Ms. _____

The matter embodied in this project is a genuine work done by the student and has not been
submitted whether to this University or to any other University / Institute for the fulfilment of the
requirement of any course of study.

Signature of the Student

Name and Address
of the Student :

Signature of the Guide

Name, Designation and
Address of the Guide

Enrolment No.:



NALANDA OPEN UNIVERSITY
Ward No-11, Nalanda – 803111
School of Computer Education and Information Technology

PROJECT TRAINEE LETTER

Date:

Subject: Project Trainee

Sir,

This is to certify that Mr./Ms. _____ whose Enrolment No. _____ is a student of MCA Programme of Nalanda Open University and has to do a project in his/her final year. The project is compulsory for MCA programme. S/he has to do a project for 3 months in Industry/Research Laboratories under the supervision of a guide preferably from the same organisation. During his course, the student has gone through several theoretical papers such as Data Structures, Database Management System, C++, TCP/IP Programming, Intranet Administration, Java Programming, Computer Networks, S/W Engineering etc.

Looking forward for your positive response.

**Signature& Name of Registrar (Exam)
with Date and Stamp**

Note: This letter may also be signed by the coordinator of the subject concerned.