BCSP-064

BACHELOR OF COMPUTER APPLICATIONS

(BCAOL)

BCAOL 6th Semester
BCSP-064
PROJECT GUIDELINES

ignou
THE PEOPLE'S
UNIVERSITY

SCHOOL OF COMPUTER AND INFORMATION SCIENCES
INDIRA GANDHI NATIONAL OPEN UNIVERSITY
MAIDAN GARHI, NEW DELHI – 110 068

CONTENTS

MESSAGE FROM THE PROJECT CO-ORDINATOR

The Bachelor of Computer Applications (BCAOL) programme prepares the students to take up positions as Programmers, Systems Analysts, Systems Designers in the field related to computer science and information technology, and ITES or students may go for higher studies in this area. We had therefore imparted the comprehensive knowledge covering the skills and core areas of computer science courses with equal emphasis on the theory and practice in BCAOL programme.

The BCAOL students are encouraged to involve themselves completely on the project work in their final semester. It is advised to students to develop their project for solving problems of software industry or any research organization. Doing this will give more exposure to handle real life problems of project development.

The courses studied by you during your BCAOL programme provide you the basic background to work on diverse application domains. The theoretical background of various courses provides you the necessary foundation, principles, and practices to develop effective ways to solve computing problems. The hands on experience gained from the practical courses provide you the knowledge to work with various operating systems, programming languages, and software tools.

This project work is kept in BCAOL 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. BCSP-064 project should be taken as an opportunity to develop software, which gives exposure to SDLC. Topics selected, should be complex and large enough to justify as a BCA project (8 credits of work load). 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 Exam Discipline Committee of the University as an Unfair means case for necessary action. Students should strictly follow and adhere to the BCSP-064 project guidelines.

I wish you all the success.

BCAOL COORDINATOR

Email: bcaolsocis@ignou.ac.in

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I.   CALENDAR FOR THE PROJECT

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Sl.No.	Topic	Date
1.	Submission of a Guide's bio-data and project proposal in Soft Copy - PDF File format **on the LMS at the appropriate place/link designated for it**.	**Twice a year as shown below:** **1st April to 30th June** **or** **1st October to 31st December**
2.	Approval of Project	**About 30 days** after the project proposal is received.
3.	Submission of the Project Report (**one copy**) in Soft Copy - PDF format **on the LMS at the appropriate place/link designated for it**.	**Twice a year as shown below:** **1st July to 30th September (For Project Proposal that have been approved during the 1st April to 30th June slot)** **or** **1st January to 31st March (For Project Proposal that have been approved during 1st October to 31st December slot)**
4.	Viva-Voce to be conducted (**in Online Mode**)	**In July** (For project reports submitted during 1st January - 31st March slot) **In January** (For project reports submitted during 1st July – 30th September slot)

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II.   PROFORMA OF BCA PROJECT PROPOSAL (BCSP-064)
(Project's Title and Guide's Details)

Enrolment No.: ……………..………   **Regional Center:** ……………..………

1.   Name and Address of the student
………………………..………………………………………………………………………………
………
………
E-mail:…………………………………………….......................Telephone No. …………………………..

2.   Title of the Project …………..……………………………………………………………………….

3.   Name and Address of the Guide
……
……
……

	Ph.D.	M.Tech.	B.Tech.	MCA	Any other
4. Qualification of the Guide (Attach bio-data also)	☐	☐	☐	☐	☐

(Note : i. All the above mentioned Degrees must have been awarded in Computer Science/IT only
ii. A Guide should not guide more than 8 students of BCA&BCAOL at any point of time)

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

6. Software Used for this Project: ……………………………………………………………

(Note :
1. 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)
2. Use of C or C++ Programming Language for Project Related to Database Management is strictly forbidden.

Signature of the Student   Signature of the Guide

Date: …………………   Date: …………………

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

For Office Use Only

………………………………………
☐   ☐   Signature, Designation, Stamp of the
                                                              Project Proposal Evaluator
Approved   Not approved   Date: ……………………

Suggestions for reformulating the 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 (12-15 pages).**

4. **A self-addressed envelope with duly affixed postage stamps (to send it by ordinary post only) on it.**

A copy of the complete Project Proposal (along with Project Proforma, Project Synopsis, Biodata of the guide) submitted on the LMS should be retained(kept in proper custody) by the student for future reference.

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III. 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)

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.** The project proposal should contain complete details in the following form:

1. Title of the Project
2. Introduction and Objectives of the Project
3. Project Category (RDBMS/OOPS/Networking/Multimedia/Artificial Intelligence/Expert Systems etc.)
4. Analysis (DFDs at least up to second level , ER Diagrams/ Class Diagrams/ Database Design etc. as per the project requirements).
5. A complete structure which includes:
   - Number of modules and their description to provide an estimation of the student‟s effort on the project.
   - Data Structures as per the project requirements for all the modules.
   - Process Logic of each module.
   - Testing process to be used.
   - Reports generation (Mention tentative content of report)
6. Tools / Platform, Hardware and Software Requirement specifications
7. Are you doing this project for any Industry/Client? Mention Yes/No. If Yes, Mention the Name and Address of the Industry or Client
8. Future scope and further enhancement of the project.

IV.   PROJECT PROPOSAL SUBMISSION AND APPROVAL

After finalising the topic and the selection of the guide, students should submit the Project Proposal Proforma given on page no. 6 along with the synopsis and bio-data of the guide on the LMS. Incomplete project proposals in any respect will be summarily rejected.

COMMUNICATION OF APPROVAL

Communication regarding the Approval / Non-approval of the project will be sent to you **in a month after the submission of the project proposal on LMS**.

RESUBMISSION OF THE PROJECT PROPOSAL IN CASE OF NON-APPROVAL

In case of non-approval, the suggestions for reformulating the project will be communicated to you. The revised project synopsis along with a new Performa, should be re-submitted along with a copy of the earlier synopsis and non-approval project proposal Performa in the **next slot.** For example, if the student submitted the synopsis during the 1st April to 30th June slot and is not approved due to some reasons, s/he is eligible to resubmit the revised project synopsis only during the next slot i.e., 1st October to 31st December. These guidelines are applicable for earlier batch students also whose project work is pending.

ELIGIBILITY OF PROJECT GUIDE

1. A person having Ph.D./M.Tech. in Computer Science.
                        OR
2. A person having B.E/B.Tech (Computer Science), MCA, M.Sc (Computer Science) with minimum 2 years experience in Industry / Teaching.

V.   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 (Modularization 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

*Students who have done their project for any organization are permitted to attach detailed algorithm/specification instead of code, in case, the organization 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 organization 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 in Soft Copy - PDF file; should consist of a **Contents** page; all pages of report should be numbered; content should be well organized in a meaningful manner; the text & screen layouts should be original.)

2.   Original copy(Scanned) of the Approved Project Proposal Proforma, Synopsis and Guide's Bio-data.
3.   Certificate of Originality (Format given on page no. 13).

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 on LMS** by the date mentioned in the Calendar for the project (refer to page-3).

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.15). 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 150 marks and the **Viva-Voce** is for 50 marks. To be declared successful, the student should secure at least 50% marks separately in both project report evaluation (i.e.75/150) and viva-voce (i.e.50/100). Students will be duly intimated about the schedule of viva-voce by **an email from the respective Regional Centre**. An unsuccessful student can **either submit the same project after following comments on the assessment sheet** or s/he can **do a different project. Always, ensure that the BCSP-064 project guidelines are followed.**

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

RESUBMISSION OF THE BCA PROJECT IN CASE OF FAILED STUDENTS

If the student is unsuccessful in the project, s/he should „re-do" the whole cycle, right from the submission of the project synopsis. Students are advised to select a new topic for the project and should prepare and submit the project synopsis **on the LMS as per the project guidelines**. There are no separate slots for the submission of the project synopsis / project reports for the failed students. Respective submissions of the project synopsis and the project reports should be done strictly as per the "calendar for the BCA project" given in the project guidelines. Along with the resubmission of the project report, the student is required to remit the pro-rata fee (subject to change as per university rule)

ENQUIRIES

Enquiries regarding the Project Report and Viva-Voce should be addressed to the **Regional Director, Concerned Regional Centre.** In all correspondence, please quote your Enrolment No.

VI. IMPORTANT POINTS WHILE PREPARING THE PROJECT REPORT

1.   The Project Report should be submitted in A-4 size typed in double space. The Project   Report should be in Soft Copy - PDF file.

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 Biodata should consist of signature of the Guide.
- Certificate of Originality (Format given on Page no.13)
- 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** Soft Copy - **PDF file** of the project report is to be on the LMS. Keep the copy of the project report **while appearing for viva voce.**

5   Not more than one student is permitted to work on a Project.

6.   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.   In case, students require any letter from the University for doing a project in any organization, they may request the Regional Director of the concerned Regional centre for the issuance of the same in the format indicated under **Project Trainee** in this document. (Refer to Page number : 15).

VII. 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 Developer 2000,VC++, Jbuilder etc.

RDBMS/BACK END : Oracle, Ingres, Sybase, Progress, SQL Plus, Versant, MY SQL, SQL Server, DB2

LANGUAGES : C, C++, Java, VC++, C#,Python etc.

SCRIPTING LANGUAGES : PERL, SHELL Scripts(Unix), TcL/TK

RDBMS/BACK END : Oracle, Ingres, Sybase, Progress, SQL Plus, Versant, MY SQL, SQL Server, DB2,SQL Lite etc.

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, PHP, Ajax,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 etc

NETWORKING TECHNOLOGIES : ATM, Frame Relay, TCP/IP, SNMP, GSM, VoIP, PPP, IP-PSTN, SONET/SDH

WIRELESS TECHNOLOGIES : Blue Tooth, 3G, ISDN, EDGE, Mobile Apps

REALTIME OPERATING SYSTEM/ EMBEDDED SKILLS : QNX, LINUX, OSEK, DSP, VRTX, RTXC, Nucleus

OPERATING SYSTEMS : WINDOWS 95/98/2000/ME, WINDOWS NT, UNIX, LINUX, IRIX, SUN SOLARIS, HP/UX, PSOS, VxWorks, AS400, AIX, WINDOWS XP, DOS

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/Mobile Application

*Note: Projects should not be developed using the packages like **Dbase, Foxpro, Visual Foxpro** . Also, projects **should not be developed using the combination of Visual Basic as the front end and MS-Access as the back end.** Student should be innovative in each and every phase of project development. Student should do coding by himself/herself. Students should choose **Software/Tools/Framework as per latest development in the area.***

VIII. REMUNERATION FORM FOR THE BCA (BCSP-064) PROJECT GUIDE

**INDIRA GANDHI NATIONAL OPEN UNIVERSITY
MAIDAN GARHI, NEW DELHI – 110068**

REMUNERATION BILL FOR THE BCA PROJECT GUIDE

1. Course Code   :   **BCA (BCSP-064)**

2. Name of the Guide   :   _____

3. Residential Address   :   _____

                                        _____

                                        _____

4. Designation   :   _____

5. Office address   :   _____

This is to certify that I have Guided the following student/(s) for their project work:

S.No	Enrolment Number of the student	PR No. (to be filled by the Regional Centre)	Name of the student	Title of the Project	Amount Claimed

Signature of the Guide

Date :…...……………………

NOTE: Project guide cannot guide more than eight students in any given point of time. This form duly signed by the guide placed in a separate envelope, should be submitted along with the project report. Remuneration Bill not accompanied with the project report will not be considered for payment. For BCSP-064(8 Credits) course, the remuneration to the project guide (for guiding one project) is as per the university norm.

FOR USE IN THE EXAMINATION BRANCH

Registrar (SR&ED)   Verified by Dealing Asstt.

FOR USE IN FINANCE BRANCH

Passed for payment of Rs.   :   _____

Debit Head: Examination   _____

          :   Contingent   _____

          :   T.A.   _____

Dated   : _____   Section Officer / A.R. (Accounts)

                                                 Dealing Asstt.

_____

Paid by Cheque No. ————————————   Dated _____

                                                 Assistant Registrar

This is to certify that the project report entitled _____

Submitted to **Indira Gandhi National Open University** in partial fulfilment of the requirement

for the award of the degree of **BACHELOR OF COMPUTER APPLICATIONS (BCA) ,** 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   Signature of the Guide

Name and Address   Name, Designation and
of the student :   Address of the Guide

Enrolment No.:

School of Computer and Information Sciences
INDIRA GANDHI NATIONAL OPEN UNIVERSITY
Maidan Garhi, NEW DELHI – 110068

<div style="border:1px solid">

X. PROJECT TRAINEE LETTER

</div>

Date:

Subject: Project Trainee

Sir,

    This is to certify that Mr / Ms_____ whose Enrolment No._____ is a student of BCA Programme of Indira Gandhi National Open University and has to do a project in his/her final year starting from January / July session. The project is compulsory for BCA programme. S/he has to do a project for 3-6 months in Industry/Research Laboratories under the supervision of a guide preferably from the same organization. During his course, the student has gone through / will go through several theoretical papers such as Data Structures, Database Management System, Programming Languages (C, C++, and Java), TCP/IP Programming, Intranet Administration, Computer Networks, Software Engineering etc. The student also attended / will also attend practical sessions in all courses in which practical sessions were prescribed for various subjects.

    Looking forward for your positive response.

Signature& Name of Project Coordinator
with Date and Stamp

Note: This letter may also be signed by Regional Director / Asst. Regional Director of Regional Centre concerned.

Link of Some Audio / Video Related to BCSP-064

Audios:

1. *https://egyankosh.ac.in/bitstream/123456789/53488/1/Module_I_Problem_Identification_and_Tool_and_Platform_Selection.html*
2. https://egyankosh.ac.in/bitstream/123456789/53489/1/Module_II_%20Analysis_and_Design_Documentation_for_Project_Synopsis.html
3. https://egyankosh.ac.in/bitstream/123456789/53490/1/Module_III_Preparation_of_Project_Report.html
4. https://egyankosh.ac.in/bitstream/123456789/53491/1/Module_IV_Viva_Voce_of_Project.html

Videos:

1. https://egyankosh.ac.in/bitstream/123456789/72471/1/Problem_Identification_for_Project.html
2. https://egyankosh.ac.in/bitstream/123456789/72474/1/Components_of_Project_Synopsis.html
3. https://egyankosh.ac.in/bitstream/123456789/72476/1/Preparing_Project_Report.html
4. https://egyankosh.ac.in/bitstream/123456789/72478/1/Preparing_for_Viva_Voce.htm