

MANGALORE UNIVERSITY

**REVISED CURRICULUM STRUCTURE AND
SCHEME OF EXAMINATION OF**

**B.C.A.
(BACHELOR OF COMPUTER APPLICATIONS)**

Choice Based Credit System (CBCS)

2019-2020 Onwards

MANGALORE UNIVERSITY
Bachelor of Computer Applications (BCA) Degree Programme Pattern and Scheme of Examinations

I / II/III/IV Semesters

	Courses	No. of Courses L/P	Instruction Hrs/week	Duration of Exam(hrs)	Marks			Credits
					IA	Exam	Total	
Group 1	5 Computer Application Courses	3T	3 x 4	3 x 3	3 x 20	3 x 80	3 x 100	3 x 2 =6
		2P	2 x 4	2 x 3	2 x 20	20 x 80	2 x 80	2 x 2 =4
Group 2	One course from 4 Electives	1T	1 x 2	1 x 2	1 x 10	1 x 40	1 x 50	1*1 =1
Group 3	2 Languages	2L	2 x 4	2 x 3	2 x 20	2 x 80	2 x 100	2 x 2 =4
	Elective Foundation	1T	1 x 2	1 x 2	1 x 10	1 x 40	1 x 50	1*1 =1
Group 4	EC & CC	1T	1 x 2	1 x 2	1 x 50	--	1 x 50	1*1=1
							Semester Credit Total	17

V Semester

	Courses	No. of Courses L/P	Instruction hrs/week	Duration of Exam(hrs)	Marks			Credits
					IA	Exam	Total	
Group 1	9 Compute Application Courses	6T	6 x 4	6 x 3	6 x 20	6 x 80	6 x 100	6 x 2=12
		3P	3 x 3	3 x 3	3 x 20	3 x 80	3 x 100	3 x 2 =6
							Semester Credit Total	18

VI Semester

	Courses	No. of Courses L/P	Instructi on hrs/ week	Duration of Exam(hrs)	Marks			Credits
					IA	Exam	Total	
Group 1	4 Computer Application courses	4 (T/P)	4x4	4x3	4x20	4x80	4x100	4x2=8
	Project work	Dissert ation	20		100	Project Report : 300 Presentati on & VIVA :100	500	10
							Semester Credit Total	18
Grand Total Credit for three year Degree Programme : 104								

Group-I Course-29	BCAC 387: Project Work	Credits : 10
Theory : 4 hrs/week Credits: 2		IA : 100 Exam : 400

PROJECT GUIDELINES

Preamble: Project work has been made a part of BCA course to give students exposure to Software development exercises. The primary emphasis of the project work is to understand and gain the knowledge of the principles of software engineering practices. As such, during the development of the project students shall involve themselves 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. Since, the project work spans over the entire final semester, the students shall be advised to take up projects for solving problems of software industry or any research organization or the real life problems suggested by the faculty in-charge of BCA project work in the Institutions. Topic chosen of work must be nontrivial, analytical and application-oriented. It must involve substantial original work and/or development effort based on the theme. Solved, off-the-shelf and pirated work is not entertained. Any attempt of plagiarism or use of unfair means will result in rejection of the work. All activities of the Project Development must be time-bound and the equal participation of the team members expected throughout the Development process.

GENERAL GUIDELINES TO THE INSTITUTIONS

- Calendar of Project Work shall be announced before the commencement of the Sixth semester. Calendar should contain tentative schedules for the submission of Project Proposal, Project Acceptance, Project Synopsis, Problem Analysis Document, System Design Document, Database Design, Detailed Design, Coding and Testing, Final Report, Internal Assessment exams (at least two), Viva/Voce etc.
- Students shall undertake projects with real life problems (that has direct relevance in day-to-day activities or to knowledge extension) either in their Colleges or in industry/research and development laboratories/software companies as recommended by the faculty in-charge of BCA project work in the Institutions. If a student intends to do industry project, the faculty in-charge shall ensure that the projects are genuine and original in nature.
- There shall be not more than three members in a Project team.
- At least two internal assessment exams shall be conducted to evaluate the progress made by the students at different stages of project work. Such exams may include written tests, document verification and presentations, work demonstration, group discussion, viva-voce etc. so as to objectively assess the understanding gained by the students in course of their project work.

PROJECT VALUATION

External and Internal Examiners together conduct project valuation objectively. To begin with, the finer details about various points contained in the scheme of valuation may be conclusively agreed upon through mutual consultation. During project evaluation, a student shall present his/her work through live demonstration of the software application developed as a part of project. However, if live demonstration is not possible due to the reason that some companies do not divulge source code on account of ownership rights or copyrights, students may be allowed to make PPT presentation of their authentic works. In such cases, candidates shall produce necessary declarations issued by the companies to this effect. However, students shall be enabled to present their work in entirety. The primary objective of project evaluation shall be to assess the extent of effort that was put in to meet the objectives of the project and also to gauge the understanding gained by the students in course of their project works. While evaluating Project Reports, examiners shall scrutinize whether Software Development Life Cycle (SDLC) principles have been consistently followed in the project work and the same are documented well in the Reports. However, the

relative and overall emphasis of these principles to a particular problem domain chosen may be taken into account so that project evaluations remain fair and objective.

SCHEME OF VALUATION and Marks Distribution

	Particulars	Marks
Internal Assessment		
	Progress assessment for Four Times @ 25 marks at each time	100
Project Report Valuation : 300 marks		
1	Innovativeness and utility of the project for Industry/Academic or Society (Utility)	25
2	Related studies about the project (Adequacy)	20
3	Project plan & implementation - target achieved / output delivered (effectiveness)	
	3.1 Problem Analysis	40
	3.2 System Design	40
	3.3 Database Design	40
	3.4 Detailed Design	40
	3.5 Implementation	40
	3.6 Testing	40
4	Other mandatory documents & information (certificates, contents, tables, figures, bibliography etc.)	15
Viva-Voce : 100 marks		
1	Live Demonstration (Software execution) or Dry runs (Presentation of authentic screenshots or captured videos may be used to walk through complete scenarios) - consistency and completeness	60
2	Question and Answer (Oral only or Oral and written)	40
Total Marks		400

FORMAT OF PROJECT SYNOPSIS

Synopsis is a brief outline or general view, as of a subject or written work; an abstract or a summary of the Project Work. It must be as brief (NOT MORE THAN 20 A4 sized paper pages) as is sufficient enough to explain the objective and implementation of the project that the candidate is going to take up.

The write up must adhere to the guidelines and should include the following :

1. Title of the Project.
2. Introduction, objectives and scope of the Project.
3. Project Category (Database/Web Application/ Client-server/Networking/ Multimedia/gaming etc.).
4. Tools / Platform, Hardware and Software Requirement specifications.
5. Analysis (DFDs at least up to second level, ER Diagrams/ Class Diagrams, Database Design etc. as per the project requirements).
6. 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).
7. Whether Industry Defined/Client Defined/User Defined Project? Mention the type. Mention the Name and Address of the Industry/Client.
8. Limitation of the project.
9. Future scope and further enhancement of the project.

GUIDELINES FOR PREPARATION OF DISSERTATION

1. ORGANISATION OF THE DISSERTATION

The dissertation shall be presented in a number of *chapters*, starting with **Introduction** and ending with **Conclusion**. Each of the chapters will have precise title reflecting the contents of the chapter. A chapter can be subdivided into *sections*, *sub-sections* and *sub-sub-section* so as to present the content discretely and with due emphasis.

Sequence of items in Dissertation Report

The following sequence may be followed in the preparation of the final dissertation report:

- Cover Page (On the **hardbound** cover)
- Title Page (Inner Cover Page)
- Certificate from the Institute
- Certificate from the Company
- Declaration
- Acknowledgement
- (Detailed) Table of Contents (with page numbers).
- List of Figures (with figure number, figure titles and page numbers)
- List of Tables with table number, table title and page number.
- Chapters
 1. **Introduction**
 - i. Introduction of the System
 - a. Project Title
 - b. Category
 - c. Overview
 - ii. Background
 - a. Introduction of the Company
 - b. Brief note on Existing System
 - iii. Objectives of the System
 - iv. Scope of the System
 - v. Structure of the System
 - vi. System Architecture
 - vii. End Users
 - viii. Software/Hardware used for the development
 - ix. Software/Hardware required for the implementation
 2. **SRS**
 - i. Introduction (Brief write-up about SRS)
 - ii. Overall Description
 - a. Product perspective
 - b. Product Functions
 - c. User characteristics
 - d. General constraints
 - e. Assumptions
 - iii. Special Requirements (Software / Hardware - if any)
 - iv. Functional requirements
 - a. Module 1
 - b. Module 2
 - c.
 - v. Design Constraints
 - vi. System Attributes
 - vii. Other Requirements (if any)

3. **System Design** (Functional Design)
 - i. Introduction (brief write-up about System Design)
 - ii. Assumptions and Constraints
 - iii. Functional decomposition
 - a. System software architecture
 - b. System technical architecture
 - c. System hardware architecture
 - d. External interfaces (if any)
 - iv. Description of Programs
 - a. Context Flow Diagram (CFD)
 - b. Data Flow Diagrams (DFDs – Level 0, Level 1, Level 2)
 - v. Description of components
 - a. Functional component 1
 - b. Functional component 2
 - c.
4. **Database Design** (or Data structure)
 - i. Introduction (brief write-up about Database design)
 - ii. Purpose and scope
 - iii. Database Identification
 - iv. Schema information
 - v. Table Definition
 - vi. Physical design
 - vii. Data Dictionary
 - viii. ER diagram
 - ix. Database Administration
 - a. System information
 - b. DBMS configuration
 - c. Support software required
 - d. Storage requirements
 - e. Backup and recovery
5. **Detailed Design** (Logic design of modules)
 - i. Introduction (brief write-up about Database design)
 - ii. Structure of the software package (structure chart)
 - iii. Modular decomposition of the System
 - a. Module 1
 - a. Inputs
 - b. Procedural details
 - c. File I/O interfaces
 - d. Outputs
 - e. Implementation aspects (if any)
 - b. Module 2
 1.
6. **Program code listing**
 - i. Database connection
 - ii. Authorization / Authentication
 - iii. Data store / retrieval / update
 - iv. Data validation
 - v. Search
 - vi. Named procedures / functions
 - vii. Interfacing with external devices (if any)
 - viii. Passing of parameters
 - ix. Backup/recovery
 - x. Internal documentation
 - xi.
7. **User Interface** (Screens and Reports)
 - i. Login
 - ii. Main Screen / Home page

- iii. Menu
- iv. Data store / retrieval / update
- v. Validation
- vi. View
- vii. On screen reports
- viii. Data Reports
- ix. Alerts
- x. Error messages
- xi.

8. Testing

- i. Introduction (brief write-up about Software Testing)
- ii. Test Reports
 - a. Unit Testing
 - b. Integrate Testing
 - c. System Testing

- Conclusion
- Limitations
- Scope for enhancement (future scope)
- Abbreviations and Acronyms (list)
- Bibliography / References (list in specified format)

Do not include any header or footer in any page of the report. Only page numbers should be mentioned at the bottom center of each page. 'n' copies of dissertation along with soft copy in CD should be prepared by the candidate.

2. DISSERTATION FORMAT

2.1 Paper

2.1.1 Quality

The dissertation shall be printed on white bond paper, whiteness 95% or above, weight 70 gram or more per square meter.

2.1.2 Size

The size of the paper shall be standard A4; height 297 mm, width 210 mm.

2.1.3 Type-Setting, Text Processing and Printing

The text shall be printed employing Laserjet or Inkjet printer, the text having been processed using a standard text processor. The standard font shall be Times New Roman of 12 pts with 1.5 line spacing.

2.1.4 Page Format

The printed sheets shall have the following writing area and margins:

Top margin	.5"
Bottom margin	.5"
Left margin	1"
Right margin	.75"

2.1.5 Pagination

Page numbering in the text of the dissertation shall be numerals starting from '**1**' at the center of the footer. The text of the written dissertation shall not be *less than 60 pages excluding references, tables, questionnaires and other annexure.*

Pagination for pages before the Introduction chapter shall be in lower case Roman numerals, e.g., 'iv'.

2.1.6 Paragraph format

Vertical space between paragraphs shall be about 2.5 line spacing.

The first line of each paragraph should normally be indented by five characters or 12 mm. A candidate may, however, choose not to indent if (s) he has provided sufficient paragraph separation.

A paragraph should normally comprise more than one line. A single line of a paragraph shall not be left at the top or bottom of a page (that is, no windows or orphans should be left).

The word at the right end of the first line of a page or paragraph should, as far as possible, not be hyphenated.

2.2 Chapter and Section format

2.2.1 Chapter

Each chapter shall begin on a fresh page with an additional top margin of about 75 mm. Chapter number (in Hindu- Arabic) and title shall be printed at the center of the line in 6 mm font size (18 pt) in bold face using both upper and lower case (all capitals or small capitals shall not be used). A vertical gap of about 25 mm shall be left between the chapter number and chapter title lines and between chapter title line and the first paragraph.

2.2.2 Sections and Sub- sections

A chapter can be divided into **Sections, Sub-sections and Sub-sub-sections** so as to present different concepts separately. Sections and sub-sections can be numbered using decimal points, e.g., 2.2 for the second Section in Chapter 2 and 2.3.4 for the fourth Sub-section in third Section of Chapter 2. Chapters, Sections and Sub-Sections shall be included in the *Contents* with page numbers flushed to the right. Further subsections need not be numbered or included in the contents. The Sections and Sub-sections titles along with their numbers in 5 and 4mm (16 and 14 pt) fonts, respectively, in bold face shall be flushed to the left (not centered) with 15 mm space above and below these lines. In further subdivisions character size of 3 and 3.5 with bold face, small caps, all caps and italics may be used for the titles flushed left or centered. These shall not feature in the contents.

2.2.3 Table / Figure Format

As far as possible tables and figures should be presented in portrait style. Small size table and figures (less than half of writing area of a page) should be incorporated within the text, while larger ones may be presented in separate pages. Table and figures shall be numbered chapter-wise. For example, the fourth figure in Chapter 5 will bear the number **Figure 5.4** or *Fig.5.4*

Table number and title will be placed above the table while the figure number and caption will be located below the figure. Reference for Table and Figures reproduced from elsewhere shall be cited in the last and separate line in the table and figure caption, e.g. (after McGregor [12]).

3 AUXILIARY FORMAT

3.1 Binding

The dissertation shall be hard cover bound in leather or rexin.

3.2 Front Covers

The front cover shall contain the following details:

- Full title of dissertation in 6 mm 22 point size font properly centered and positioned at the top.
- Full name of the candidate in 4.5 mm 15 point size font properly centered at the middle of the page.
- A 40 mm dia replica of the college emblem followed by the name of the Department and the year of submission, each in a separate line and properly centered and located at the bottom of the page.

3.2.1 Lettering

All lettering shall be embossed in gold.

3.2.2 Bound back

The degree, the name of the candidate and the year of submission shall also be embossed on the bound (side) in gold.

3.3 Blank sheets

In addition to the white sheets (binding requirement) two white shall be put at the beginning and end of the dissertation.

3.4 Title sheet

This shall be the first printed page of the dissertation and shall contain the submission statement: the Dissertation submitted in partial fulfillment of the requirements of the BCA, the name and Roll No. Of the candidate, name (s) of the supervisor and co-supervisor (s) (if any), Department and year of submission.