MANGALORE UNIVERSITY

Bachelor of Computer Applications (B.C.A) Course Pattern and Scheme of Examinations

III SEMESTER BCA

Subject Code	Subject	Theory Hours/ Week	Practical Hours/ Week	Duration of exams (Hrs)	Marks & Credits			
					IA	Exam	Total	Credits
BCA301	Basic Mathematics	4	-	3	20	80	100	2
BCA302	Microprocessors	4	-	3	20	80	100	2
BCA303	Data Structures	4	-	3	20	80	100	2
BCA304	Operating System	4	-	3	20	80	100	2
BCA305	Data Mining	4	-	3	20	80	100	2
BCA306	Microprocessor Lab	-	6	3	20	80	100	2
BCA307	Data Structure & OS Lab	-	6	3	20	80	100	2
BCA309	CC & EC	-	-	-	50	-	50	1
	Total	20	12		190	560	750	15

IV SEMESTER BCA

Subject Code	Subject	Theory Hours/ Week	Practical Hours/ Week	Duration of exams (Hrs)	Marks and Credits			
					IA	Exam	Total	Credits
BCA401	Computer Graphics and Multimedia	4	-	3	20	80	100	2
BCA402	Visual Basic .NET Programming	4	-	3	20	80	100	2
BCA403	Principles of TCP/IP	4	-	3	20	80	100	2
BCA404	E-Commerce	4	-	3	20	80	100	2
BCA405	Elective Stream-I: E1.1 E1.2 E1.3	4	-	3	20	80	100	2
BCA406	Computer Graphics Lab	-	6	3	20	80	100	2
BCA407	VB.Net Lab	-	6	3	20	80	100	2
BCA409	CC & EC	-	-	-	50	-	50	1
	Total	20	12		190	560	750	15

BCA405 - Elective Stream-I:

E1.1: Computer Oriented Numerical Analysis

E1.2: Computer Oriented Statistical Methods

E1.3: System Analysis and Design

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V SEMESTER BCA

Subject Code	Subject	Theory Hours/ Week	Practical Hours/ Week	Duration of exams (Hrs)	Marks & Credits			
					IA	Exam	Total	Credits
BCA501	Software Engineering	4	-	3	25	100	125	2.5
BCA502	Linux Environment	4	-	3	25	100	125	2.5
BCA503	Web Development in .NET	4	-	3	25	100	125	2.5
BCA504	Java Programming	4	-	3	25	100	125	2.5
BCA505	Distributed Computing	4	-	3	25	100	125	2.5
BCA506	Elective Stream-II E.2.1: E.2.2: E.2.3:	4	-	3	25	100	125	2.5
BCA507	Web Technology Lab	-	6	3	25	100	125	2.5
BCA508	DC & Java Lab	-	6	3	25	100	125	2.5
	Total	24	12		200	800	1000	20

BCA-505: Elective Stream-II:

E.2.1: Artificial Intelligence

E2.2 : Management Information System

E2.3 : LAMP Technology

VI SEMESTER BCA

Subject Code	Subject	Theory Hours/ Week	Practical Hours/ Week	Duration of exams (Hrs)	IA	Theory Exam	Total Marks	Credits
BCA-601	Project Work /Dissertation	-	36	-	160	400 (Project Report) 240 (Viva)	800	16
	Total		36		160		800	16

Total Marks : 5000

Total Credits : 100

2013-14 4th km

PAPER-XVI	BCA405-E1.1 : COMPUTER ORIENTED NUMERICAL ANALYSIS	48 hours
Theory/Week: 4 Hrs Credits: 2		I A: 20 Exam: 80
	UNIT-I	12 Hrs.
Errors in numerical computation - Errors and their computation **Solution of Algebraic and Transcendental equations**: Introduction, the Bisection method, the method of False position, the Iterative method, Newton-Raphson method, Ramanujan's method. **Interpolation:** Introduction Finite differences- forward differences, backward differences, Central differences, Newton's formula for interpolation, Languages interpolation formula. **Divided differences**- Newton's general interpolation formula		
	UNIT-II	12 Hrs.
Least Squares - Introduction, least squares curve fitting procedures - fitting a straight line, non-linear curve fitting, curve fitting by a sum of exponentials **Numerical differentiation and integration** - Numerical differentiation, Integration- Trapezoidal rule, Simpson's 1/3 rule and Simpson's 3/8 rule.		
	UNIT-III	12 Hrs.
Matrices and linear system of equations : Basic definitions, matrix operations, transpose of a matrix, the inverse of a matrix, matrix norms. **Solution of linear system: Direct methods**- Matrix inversion method, Gaussian elimination method, Gauss-Jordan method, LU decomposition. **Solution of linear systems- Iterative methods**- Gauss-Seidal methods, Jacobi's method.		
	UNIT-IV	12 Hrs.
Numerical solution of ordinary differential equations: Solution by Taylor's series, Euler's method, Modified Euler's method, Runge-Kutta methods, Predictor-corrector methods - Adams-Moulton method, Milne's method, Boundary value problems- Finite difference method.		
Text Book S.S. Sastry, **Numerical Analysis**, 3rd edition, PHI publication.		
Reference Book 1. M. K. Jain, S.R.K. Iyengar & R. K. Jain, **Numerical methods for Scientific and Engineering computation**, 5th edition, New Age International publishers. 2. V Rajaraman, **Computer Oriented Numerical Methods**, 3rd Edition, PHI, 2006.		

2013-14 onwards

PAPER-XXII	BCA-506-E2.3 : LAMP TECHNOLOGY	48 hours
Theory/Week: 4 Hrs Credits: 2		I A: 20 Exam: 80
	UNIT-I	12 Hrs.

Linux Operating System: Linux Operating System Concepts and Architecture; Overview of the Linux Kernel, User Space, Kernel Space; Processes and Daemons, Process Control; Overview of Linux Administration; Linux File system, User, Group and Resource Management; Configuration Files Overview; File system Permissions, Access Permissions and Security, Common Filesystem Commands, Recursion Option in Commands, Find, Grep, Cat, More, Less and Sort Commands.

	UNIT-II	12 Hrs.

Apache Web Server: Linux distribution Apache Installation; Starting and stopping Web Server Apache Configuration files; Apache Directives – Server Configuration, Directory level configuration: htaccess and <Directory>, Access Control, URL Pathnames, MIME types, CGI files, Automatic directory Indexing, Authentication, Log files; Virtual Hosting – IP Address Virtual Host, Name Based Virtual Host, Dynamic Virtual Hosting; Server Side includes; Apache GUI Configuration Tools â Comanche and linuxconf; Web Server Security –SSL; Apache Web Server Configuration files

	UNIT-III	12 Hrs.

HTML/XHTML and HTTP: basics review, PHP and the web server Architecture model, Overview of PHP capabilities, CGI vs. Shared Object Model, PHP HTML Embedding Tags and Syntax, simple PHP script example; PHP and HTTP environment variables

MYSQL Database Server: Installation- precompiled packages, post installed configuration, post installed troubleshooting; MySQL Administration; Commands – myisamchk, mysql, mysqladmin, mysqlbug, mysqlimport, mysqlshow; Creating users and granting them permissions; Creating databases; Data types; Creating a table; Graphical tools

PHP: Obtaining, Installing and configuring PHP; obtaining PHP Source code; Installing PHP from Binary Packages; PHP and security considerations; PHP configuration parameters and the php.ini File; Language Options, Register Globals and Security Resource limits parameters, Error Handling and Logging parameters; Data handling parameters, Paths and Directories, Dynamic Extensions, Checking install with phpinfo function.

	UNIT-IV	12 Hrs.

PHP Language core: Variables, Constants and Datatypes, and Operators; Decision making, Flow control and loops; Arrays and Array operations, Two dimensional and multidimensional arrays, Strings and strings operations; Functions, Function Declaration and parameter passing; Outputting data, include and require statements; file and Directory Access Operation; Error Handling and Reporting Considerations; Processing HTML From Input from the User ; Creating a Dynamic HTML Form with PHP; Login and Authenticating Users; Using GET, POST, SESSION and COOKIES variable; Session management and Variables; Working with Cookies, Sending Emails; Object Oriented PHP: Classes and Constructors

Database Operation With PHP: Built-in Database Function ,Connecting to a MySQl Database; Selecting a Database, Building and Sending the Query to Database; Engine, Retrieving Result â¢€ Retrieving, Updating and Inserting Data; Sample Database Routines and Code Segments, Logging Database; Operations for Troubleshooting

2018-2019

MANGALORE UNIVERSITY

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

I SEMESTER

Group	Course Code	Course	Instruction Hours/Week	Duration of exams (Hrs)	Marks & Credits			
					IA	Exam	Total	Credits
I	BCAC131	Fundamentals of Information Technology	4	3	20	80	100	2
	BCAC132	Problem Solving using C	4	3	20	80	100	2
	BCAC133	Computer Organization	4	3	20	80	100	2
	BCAP134	Office Automation Lab	4	3	20	80	100	2
	BCAP135	C Programming Lab	4	3	20	80	100	2
II	BCACE136 BCACE137	E1 : Internet Basics & HTML E2: Cloud Computing	2	2	10	40	50	1
III		Foundation Language-I	4	3	20	80	100	2
		Foundation Language-II	4	3	20	80	100	2
		Elective Foundation	2	2	10	40	50	1
IV		EC & CC	2	2	50	-	50	1
		Total	36	27	210	640	850	17

II SEMESTER

Group	Course Code	Course	Instruction Hours/Week	Duration of exams (Hrs)	Marks & Credits			
					IA	Exam	Total	Credits
I	BCAC181	Basic Mathematics	4	3	20	80	100	2
	BCAC182	Object Oriented Programming using C++	4	3	20	80	100	2
	BCAC183	Database Concepts and Oracle	4	3	20	80	100	2
	BCAP184	C++ Lab	4	3	20	80	100	2
	BCAP185	DBMS Lab	4	3	20	80	100	2
II	BCACE186 BCACE187 BCACE188	E1 : Internet of Things E2: Big Data Analytics E3: Artificial Intelligence	2	2	10	40	50	1
III		Foundation Language-I	4	3	20	80	100	2
		Foundation Language-II	4	3	20	80	100	2
		Elective Foundation	2	2	10	40	50	1
IV		EC &CC	2	2	50	-	50	1
		Total	34	27	210	640	850	17

2018-19

Group-II
Course-1

Elective - I : Semester Supportive Course

24 Hours

Theory : 2 hrs/week
Credits : 1

BCACE 136-E1:Internet Basics & HTML

IA : 10
Exam : 40

Learning Objectives

- To provides knowledge about basic concepts of internet and its applications and about various 5nternet tools available. Also to learn HTML instructions to develop simple web pages
- **Learning Outcome :**

At the end of the course the students will be able to

- Understand features of Internet and email
- Develop Simple web pages using HTML & Style Sheets

UNIT I **12 Hrs**

The Internet : Introduction, Evolution, basic internet terms, Getting connect to internet, Internet applications, Data over the internet **Internet tools:** Web browser, Web browser features, Internet Explorer environment, Electronic mail, Email address structure, checking email,sending email, email attachment, How email works, advantages and disadvantages of email,

Search Engines: Searching an internet, refining the search, Instant messaging, Features of messangers.

UNIT II **12 Hrs**

Creating Web page using HTML tags: Concepts of HTML, Head & Body Sections,Building HTML documents using various text formatting tags: <H1>...<H6>, <B>,<U>,<I>, <FONT>, <SUP><SUB><P> with align,
<BLOCKQUOTE>
<BODY> with attributes bgcolor, background,text, <HR> with size,color, Lists: Ordered, unordered and definition lists, <IMG> <A>
Creating tables : <TABLE>,<CAPTION>,<TH><TR><TD> with various attributes
Creating frames <FRAMESET>,<FRAME> tags with attributes-
Creating FORMS with elements <Input> types textbox, radio, checkbox, list box, combo box,text area, submit, button , reset. Cascading Stylesheets : Inline, embedded and external stylesheets with examples by applying font, background and box properties.

Text Books :

1. ITL Education Solution Limited, **Introduction to Information Technology**, PearsonEducation, 2012
2. Steven Holzner, HTML Black book, dreamtech publisher, 2010

2019-20

Group II Course : 1	Elective -II: Expanded Course BCACE 186 E1: Internet of Things	24 Hours
Theory/Week 2 Hrs Credit: 1		IA :10 Exam :40

UNIT I		12 Hours
Topic	**Chapter**	**Sub Sections**
Internet of Things Overview: IoT Definition , IoT vision ,smart and hyper connected devices, IoT conceptual framework, IoT Architectural view, Technology behind IoT , Components of IoT system, ,Development tools, APIs and Device interfacing components , Platform and integration tools ,Sources of IoT, M2M communication, M2M architecture, Software and Development tools, IoT examples	Chapter 1	1.1 To 1.7 [Includes All Sub sections]
Design Principles for Connected Devices: Introduction, Modified OSI model for IoT / M2M systems, ITU-T reference model, Communication technologies	Chapter 2	2.1 ,2.2,2.2.1,2.2.2 , 2.3,2.3.1,2.3.2
Design Principles for Web : Web Communication protocols for connected devices, Message Communication protocols, Communication Gateway protocols-SOAP, REST, HTTP RESTFUL and WEBSOCKETS	Chapter 3	3.1 To 3.4 [includes All Sub sections]

UNIT II		6 Hours
Internet Connectivity -Introduction, Internet connectivity, Internet based communication, IP addressing in IoT.	Chapter 4	4.1 To 4.4 [includes All Sub sections]
Data Acquiring and storage, Organising the data Transactions on stored data.	Chapter 5	5.1 To 5.4 [includes All Sub sections]
Sensors : Introduction , Sensor Technology, Industrial IoT and Automative IoT, Sensor data Communication protocols, Actuator, RFID technology Wireless sensor network technology.	Chapter 7	7.1 To 7.7 [includes All Sub sections]

TEXT BOOK :

Internet of Things: Architecture and Design Principles by Raj Kamal Mc Graw Hill Education

Reference Books:

1. **IoT Fundamentals** by David Janes , Ganzalo , Patrik , Rob Barton and Jeromey Henry
2. **Internet of Things** by Saurabh Gupta
3. **Internet of Things: A Hands-On Approach** by Arsheep Bahga , Vijay Madisetti

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

III SEMESTER

Group	Course Code	Course	Instruction Hours/Week	Duration of exams (Hrs)	Marks & Credits			
					IA	Exam	Total	Credits
I	BCAC231	Operating Systems & Linux	4	3	20	80	100	2
	BCAC232	Data Structures	4	3	20	80	100	2
	BCAC233	Visual Basic .NET Programming	4	3	20	80	100	2
	BCAP234	Operating Systems and Data Structures lab	4	3	20	80	100	2
	BCAP235	VB.Net Lab	4	3	20	80	100	2
II	BCACE236 BCACE237	E1 : Hardware & PC Maintenance E2 : Desktop Publishing	2	2	10	40	50	1
III		Foundation Language-I	4	3	20	80	100	2
		Foundation Language-II	4	3	20	80	100	2
		Elective Foundation	2	2	10	40	50	1
IV		EC &CC	2	2	50	-	50	1
		Total	36	27	210	640	850	17

BCA206: Elective Courses: Course Detailed are attached in APPENDIX I

IV SEMESTER

Group	Course Code	Course	Instruction Hours/Week	Duration of exams (Hrs)	Marks & Credits			
					IA	Exam	Total	Credits
I	BCAC281	Computer Graphics and Animation	4	3	20	80	100	2
	BCAC282	Java Programming	4	3	20	80	100	2
	BCAC283 BCAC284 BCAC285	E1: Data Mining E2: CONA E3: Business Statistics & Mathematics	4	3	20	80	100	2
	BCAP286	Computer Graphics and Animation Lab	4	3	20	80	100	2
	BCAP287	Java Lab	4	3	20	80	100	2
II	BCAOE288 BCAOE289	E1 : Fundamentals of ICT E2: E-Commerce	2	2	10	40	50	1
III		Foundation Language-I	4	3	20	80	100	2
		Foundation Language-II	4	3	20	80	100	2
		Elective Foundation	2	2	10	40	50	1
IV		EC &CC	2	2	50	-	50	1
		Total	36	27	210	640	850	17

MANGALORE UNIVERSITY

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

V SEMESTER

Group	Course Code	Course Particulars	Instruction Hours/Week	Duration of exams (Hrs)	Marks & Credits			
					IA	Exam	Total	Credits
I	BCAC331	Software Engineering	4	3	20	80	100	2
	BCAC332	Computer & Communication Networks	4	3	20	80	100	2
	BCAC333	Distributed Computing	4	3	20	80	100	2
	BCAC334	Web Technology	4	3	20	80	100	2
	BCAC335	Python Programming	4	3	20	80	100	2
	BCAC336 BCAC337 BCAC338	E1: Accounting & Financial Management E2: Android Application Development E3: SciLab Programming	4	3	20	80	100	2
	BCAP339	Web Applications Lab	3	3	20	80	100	2
	BCAP340	Python Programming Lab	3	3	20	80	100	2
	BCAP341 BCAP342 BCAP343	E1:AFM Lab / E2: AAD Lab / E3: SciLab	3	3	20	80	100	2
		Total	33	27	180	720	900	18

VI SEMESTER

Group	Course Code	Course Particulars	Instruction Hours/Week	Duration of exams (Hrs)	Marks & Credits			
					IA	Exam	Total	Credits
I	BCAC381	E-Commerce	4	3	20	80	100	2
	BCAC382	Network Security & Management	4	3	20	80	100	2
	BCAC383	Software Testing	4	3	20	80	100	2
	BCAC384 BCAC385 BCAC386	E1: Programming for Analytics E2: Business Statistics with R E3: Multivariate Data Analysis	4	3	20	80	100	2
	BCAC387	Project Work	20	3	100	Reports - 300 Presentation and Viva - 100 Total: 400	500	10
		Total	36	27	180	720	900	18

Total Marks : 5200

Grand Total Credit for three year BCA Degree Programme: 104

MANGALORE UNIVERSITY

DEPARTMENT OF ENGLISH

SYLLABI FOR UNDERGRADUATE DEGREE PROGRAMMES

CHOICE BASED CREDIT SYSTEM

(Approved on December 7, 2018 BoS (UG), effective for batches commencing from 2019 onwards)

CORE COURSE IN ENGLISH

- CORE COURSE
- ELECTIVES

Paper I: EARLY ROMANTIC LITERATURE	ENCC101
Paper II: LATER ROMANTIC LITERATURE	ENCC102
Paper III: VICTORIAN LITERATURE	ENCC201
Pa Paper IV: SEVENTEENTH CENTURY LITERATURE	ENCC202
Paper V: SHAKESPEARE	ENCC301
Paper VI: THE TWENTIETH CENTURY	ENCC302
Paper VII: INDIAN WRITING IN ENGLISH	ENCC303
Paper VIII: AMERICAN LITERATURE	ENCC304

ELECTIVES:

History of English Language (Objective: Providing an expanded scope)	ENCE101
British Socio-political Movements (Objective: Supportive to the discipline of study)	ENCE102
Translation: Theory and Practice (Objective: Nurturing students' proficiency and skill)	ENCE201
INTRODUCTION TO POETRY (Objective: Enabling an exposure to a new discipline)	ENOE101