DATTA MEGHE INSTITUTE OF MEDICAL SCIENCES

(DEEMED TO BE UNIVERSITY)

School of Allied Sciences

SAWANGI (MEGHE), WARDHA

FACULTY OF SCIENCE & TECHNOLOGY

COURSE CURRICULUM FOR

BACHELOR OF COMPUTER APPLICATION

B.C.A.

UNDER

FACULTY OF SCIENCE & TECHNOLOGY

W.E.F. 2020 -21

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1. PREAMBLE

Significant steps are undertaken by the Datta Meghe Institute of Medical Sciences to enhance academic standards and education quality, including innovation and curriculum changes, the teaching-learning process, assessment and evaluation processes, in addition to governance and other matters. From time to time, the university formulates different rules and guidelines to strengthen the education system and ensure minimum standards and quality.

The grading system is considered to be higher than the system of traditional marks and has therefore been adopted in India and abroad by top institutions. The implementation of a standardized grading system is also beneficial. This will promote student mobility between institutions within and across countries and will also enable future employers to evaluate results.

Need for BCA- Regular Mode Program

BCA (Bachelor of Computer Applications- Regular Mode) is a three-year professional Bachelor's Degree awarded in India. The graduate program is designed to meet the growing demand for qualified professionals in the field of Computer. The program is inclined more towards Software and Application Development and thus has more emphasis on latest programming languages and tools to develop better and faster applications.

BCA is a course exclusively designed to meet the requirements for IT trained students for various organizations. This course significantly emphasizes planning, designing and building of complex commercial application software and system software. The course also places equal importance on functional knowledge in various areas.

A three year full-time course is not just a graduate course; it is also a complete professional grooming for students for a successful career in the IT Industry with Emerging trends in Computer and its Applications.

2. ABOUT THE COURSE

BCA is an acronyms for Bachelor of Computer Application. The three-year regular BCA is designed with programming skills and software domain specialisation to enable students to link the profession with passion. Becoming a " Specialist" with industry of choice allow learners to choose "Career by Choice". The CIFA model is designed to develop quality degree programs.

- **Co-creation:** The front-end alignment to enhance learning excellence and the back-end alignment to ensure career excellence with global academic partners and hiring organisation makes this programme highly engaging and exciting.
- **Innovation:** The integrated industry programme is designed to introduce students to the current needs and requirements of the fast-growing primary sector globally and is aligned to prepare the students through the concept of knowing, doing and being.
- **Focus:** The programme is designed for the students who intend to acquire and/or upgrade business knowledge & skills, sectorial exposure and Domain expertise.
- **Alignment:** The integration of local and global requirements and required competencies and attributes to develop while undergoing the program ensures the highest ROI and lifelong learning.

A comprehensive three-year, UG degree programme aims to create future Programmers.

The programme is meant for students passionate to pursue a career by choice.

3. AIM

This course, Bachelor of Computer Application, is designed and introduced by University to bridge the gap and produce employable graduate in Information technology which will enable the industry to grow and the graduates to become successful in the field of Information Technology / Computer Application.

Goals

- To enable a learner to pursue any area of knowledge domain depending upon his / her interest.
- To widen the horizon of learner's intellectual insight.
- Rigidity of present system does not allow pursuit of areas of interest as well as widening the educational horizon of the learner, and
- Provision of choice is an essential condition for broad-based learner's profile across areas of knowledge.

A comprehensive **three-year, UG degree** programme aims to create future Programmers.

4. OBJECTIVES:

The objectives of the program are to -

- **PEO 1:** To progress their career productively in Software Industry, Academia, Research, Entrepreneurial pursuit, Government, Consulting firms, Banking, Research and other Information Technology enabled services.
- **PEO 2:** To achieve peer-recognition; as an individual or in a team; by adopting ethics and professionalism and communicate effectively to excel well in cross culture and inter-disciplinary teams.
- **PEO 3:** To continue a lifelong professional development in computing that contributes in self and societal growth.

Program Outcomes

PO1 Computational knowledge: Acquire knowledge of Computing Fundamentals, Basic

	Mathematics, Computing Specialization and Domain Knowledge of proper computing models from defined problems.
PO2	Problem analysis: Identify, formulate review research literate and analyze complex engineering problems reading substantiated conclusions using first principles mathematics, computing science and relevant domains.
PO3	Design/development of solutions: Ability to design system s/w or process as per needs and specifications.
PO4	Conduct investigations of complex computing problems: Use research-based knowledge and research methods including design of experiments, analysis & interpretation of data & synthesis of information to provide valid conclusions.
PO5	Modern Tool Usage: Ability to demonstrate skills to use modern s/w & h/w tools to analyze problems.
PO6	Professional Ethics: Apply ethical principles and commit to professional ethics and cyber regulations.
PO7	Life-Long Learning: Ability to develop confidence for self-education and life-long learning in the broadest context of technological change.
PO8	Project management and finance: Ability to demonstrate knowledge & understanding of the engineering and management principles and apply them as a member & as a leader in a team to manage multidisciplinary projects.

5. ELIGIBILITY CRITERIA:

The aspiring candidate should have passed the Higher Secondary (10+2) or equivalent examination recognized by any Indian. The candidate has attained the age of 17 years as in the year of admission.

6. INTAKE CAPACITY-

20 candidates per year

7. TEACHING LEARNING METHODOLOGY –

- The modality of teaching for teaching learning modules will be in the form of didactic
- Lectures, self-directed learning, seminars presentation Microteaching etc.

8. MEDIUM OF INSTRUCTION:

- English shall be the medium of instruction for all the subjects of study and for examination of the course.

9. ATTENDANCE:

A candidate has to secure minimum 80% attendance in overall with at least-

1. 75% attendance in theoretical

2. 80% in Skills training (practical) for qualifying to appear for the final examination

10. COURSE DURATION-

The duration of BCA programme, under this Direction, shall be of Three years consisting of six semesters i.e. Semesters-I & II in first year and Semesters-III &IV in second year and Semesters-V & VI in third year.

11. EDUCATIONAL PROGRAM

A) Distribution of Course duration

First Semester– Foundation Course

Sl. No.	Course Titles
BCA-101	Communication Skills
BCA-102	Discrete Mathematics-I
BCA-103	Basic Computer studies
BCA-104	Introduction to Digital Electronics
BCA-105	Programming Concepts using C
BCA106 (PR-I)	Basic Computer studies Practical
BCA107 (PR-II)	Programming Concepts using C

Second Semester

Sl. No.	Course Titles
BCA -201	Discrete Mathematics-II
BCA -202	Data Structure and Algorithm
BCA -203	Web Page Design
BCA -204	Object Oriented Programming using C++
BCA -205	System Analysis & Design
BCA -206 (PR-I)	Web Page Design Practical
BCA -207 (PR-II)	Object Oriented Programming using C++ Practical (including D.S.)

Third Semester

Sl. No.	Course Titles
BCA -301	Numerical Methodology & Statistics
BCA -302	Visual Basic Programming
BCA -303	Introduction to Computer Networks
BCA -304	Enterprise Resource Planning (with MIS)
BCA -305	Operating System & Shell Programming
BCA -306 (PR-I)	Visual Basic Programming Practical
BCA -307(PR-II)	Operating System & Shell Practical

Fourth Semester

Sl. No.	Course Titles
BCA -401	Database Management Systems
BCA -402	Introduction To Core java
BCA -403	Data Mining and Warehousing
BCA -404	Theory of Computation
BCA -405	Software Engineering
BCA -406 (PR-I)	Database Management Systems Practical
BCA -407 (PR-II)	Introduction To Core java Practical

Fifth Semester

Sl. No.	Course Titles
BCA -501	PHP
BCA -502	Python
BCA -503	Artificial Intelligence
BCA -504	Computer Graphics
BCA -505	Software Testing
BCA -506(PR-I)	PHP Practical
BCA -507 (PR-II)	Python Practical

Sixth Semester

Sl. No.	Course Titles
BCA -601	Core Courses - Semester 6 with Apprenticeship /Internship with Sector Skill Councils certification or at any Hospital
BCA -602	Project

B) Distribution of Hours and Credits

First Semester – Foundation Course

Course Code	Course Name	Lectures (L)	Tutorial (T)	Pra/Activity (P)	Credits
BCA-101	Communication Skills	3	1	0	4
BCA-102	Discrete Mathematics-I	3	1	0	4
BCA-103	Basic Computer studies	3	1	0	4
BCA-104	Introduction to Digital Electronics	3	1	0	4
BCA-105	Programming Concepts using C	3	1	0	4
BCA107 (PR-I)	Basic Computer studies Practical	0	0	2	2
BCA108 (PR-II)	Programming Concepts using C	0	0	2	2
Total		15	5	4	24

Second Semester

Sl. No.	Course Titles	Lectures (L)	Tutorial (T)	Pra/Activity (P)	Credits
BCA -201	Discrete Mathematics-II	3	1	0	4
BCA -202	Data Structure and Algorithm	3	1	0	4
BCA -203	Web Page Design	3	1	0	4
BCA -204	Object Oriented Programming using C++	3	1	0	4
BCA -205	System Analysis & Design	3	0	0	3
BCA -206 (PR-I)	Web Page Design Practical	0	0	2	2
BCA -207 (PR-II)	Object Oriented Programming using C++ Practical (including D.S.)	0	0	2	2
Total		15	4	4	23

Third Semester

Sl. No.	Course Titles	L	T	P	Credits
BCA -301	Numerical Methodology & Statistics	3	1	0	4
BCA -302	Visual Basic Programming	3	1	0	4
BCA -303	Introduction to Computer Networks	3	1	0	4
BCA -304	Enterprise Resource Planning (with MIS)	2	0	0	2
BCA -305	Operating System & Shell Programming	3	1	0	4
BCA -306 (PR-I)	Visual Basic Programming Practical	0	0	2	2
BCA - 307(PR-II)	Operating System & Shell Practical	0	0	2	2
	TOTAL	14	4	4	22

Fourth Semester

Sl. No.	Course Titles	L	T	P	Credits
BCA -401	Database Management Systems	3	1	0	4
BCA -402	Introduction To Core java	3	1	0	4
BCA -403	Data Mining and Warehousing	3	1	0	4
BCA -404	Theory of Computation	3	0	0	3
BCA -405	Software Engineering	3	0	0	3
BCA -406 (PR-I)	Database Management Systems Practical	0	0	2	2
BCA -407 (PR-II)	Introduction To Core java Practical	0	0	2	2
	TOTAL	15	3	4	22

Fifth semester

Sl. No.	Course Titles	L	T	P	Credits
BCA -501	PHP	3	1	0	4
BCA -502	Python	3	1	0	4
BCA -503	Artificial Intelligence	3	1	0	4
BCA -504	Computer Graphics	3	1	0	4
BCA -505	Software Testing	3	0	0	3
BCA -506(PR-I)	PHP Practical	0	0	2	2
BCA -507 (PR-II)	Python Practical	0	0	2	2
	TOTAL	15	4	4	23

Sixth Semester

Sl. No.	Course Titles	L	T	P	Credits
BCA-601 PROJECT	Industry Internship / Project	0	0	50	25

C) Distribution of teaching hours

First Semester							
Sl. No.	**Course Titles**	**Hours**			**Credits**		
		Theory	**Practical**	**Total**	**Theory**	**Practical**	**Total**
BCA-101	Communication Skills	60	00	60	4	0	4
BCA-102	Discrete Mathematics-I	60	00	60	4	0	4
BCA-103	Basic Computer studies	60	00	60	4	0	4
BCA-104	Introduction to Digital Electronics	60	00	60	4	0	4
BCA-105	Programming Concepts using C	60	00	60	4	0	4
BCA106 (PR-I)	Basic Computer studies Practical	00	60	60	0	4	2
BCA107 (PR-II)	Programming Concepts using C	00	60	60	0	4	2
		300	120	420	20	4	24

Second Semester							
Sl. No.	**Course Titles**	**Hours**			**Credits**		
		Theory	**Practical**	**Total**	**Theory**	**Practical**	**Total**
BCA - 201	Discrete Mathematics-II	60	00	60	4	0	4
BCA - 202	Data Structure and Algorithm	60	00	60	4	0	4
BCA - 203	Web Page Design	60	00	60	4	0	4
BCA - 204	Object Oriented Programming using C++	60	00	60	4	0	4
BCA - 205	System Analysis & Design	45	00	45	3	0	3
BCA - 206 (PR-I)	Web Page Design Practical	00	60	60	0	4	2
BCA - 207 (PR-II)	Object Oriented Programming using C++ Practical (including D.S.)	00	60	60	0	4	2
TOTAL		**285**	**120**	**405**	**19**	**8**	**23**