



MATS UNIVERSITY



**CHHATTISGARH'S FIRST AND ONLY STATE UNIVERSITY
ACCREDITED WITH **A+** GRADE BY NAAC**

MATS CENTRE FOR DISTANCE AND ONLINE EDUCATION (MCDOE)



ODL MODE

PROGRAMME GUIDE

MATS CENTRE FOR OPEN AND DISTANCE EDUCATION (MCODE)

BACHELOR OF COMPUTER APPLICATIONS (BCA)

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**MATS CENTER FOR OPEN AND DISTANCE EDUCATION
(MCODE)**
MATS UNIVERSITY

**Address: Aarang-Kharora Highway, Gullu, Aarang, Raipur, Chhattisgarh,
Pincode-493 441, Contact: 07714078995/96**

ABOUT UNIVERSITY

At **MATS**, we are committed to developing leaders who are not merely skilled professionals but also compassionate people with strong ethical values and discipline.

We provide our students with the **information, skills, confidence, and experience** necessary to improve the world around them. MATS University not only develops their students individually but also gives them time and opportunity to develop new interests, learn new skills, and meet new people.

Established in **2006**, MATS University has emerged as a leading educational institute in Raipur, committed to nurturing future leaders and professionals across various disciplines. We take pride in our distinguished faculty members who are experts in their respective roles, dedicating themselves to imparting knowledge and mentorship to our students.

Key Features of University: Following are some of the key features which makes university unique in terms of quality and reliability.

- It State-of-the-Art Facilities: Advanced classrooms and labs for enhanced learning.
- Sustainability: Green buildings and eco-friendly practices.
- Technology Integration: Smart classrooms and digital resources for better education.
- Experienced Professors: Academic and practical expertise that enriches the learning environment.
- Research & Development: Active involvement in cutting-edge research.
- Personalized Learning: Smaller class sizes and mentorship for more interaction and attention.
- Inclusivity & Diversity: Celebrating different backgrounds and perspectives: Student Engagement: Clubs and events that create a lively campus life. Support Services: Comprehensive help for academic and personal growth.

University Vision: To become a world-class Centre in providing globally relevant education. MATS will be the Global University, known for the quality academic programmes and outstanding faculty, products and services to student and clients independent of place and time constraints. MATS University will be a benchmark institution for lifelong partnership with students, the workforce and public and private enterprises. Building on its proud tradition, MATS university will extend educational opportunities to those who will make our state (Chhattisgarh), our nation and global society a better place to live and work.

University Mission: To foster an intellectual and ethical environment in which the spirit and skills within MATS will thrive so as to impart high quality education, training, research and consultancy services with a global outlook and human values. To create and develop technocrats, entrepreneurs and business leaders who will strive to & improve the quality of human life. To create truly world class schools of Management Sciences, Engineering Sciences, Information Technology, Life Science, Basic and Applied Sciences, Humanities & Social Sciences and Life Skills.

RECOGNITIONS

- The University is recognized under Section 2(f) of the UGC Act.
- NAAC A+

THE FACULTIES OF STUDIES

The following faculties currently are in operation in the University:

- [MATS School of Management & Business Studies](#)
- [MATS Law School](#)
- [MATS School of Engineering & Information Technology](#)
- [MATS School of Education](#)
- [MATS School of Information Technology](#)
- [MATS School of Library Science](#)
- [MATS School of Sciences & Forensic Science](#)
- [MATS School of Arts & Humanities](#)
- [MATS School of Pharmacy](#)
- [MATS School of Physical Education & Yoga](#)
- [MATS School of Social Science](#)

ABOUT MATS CENTRE FOR OPEN AND DISTANCE EDUCATION

MATS University is a prestigious institution established in 2006, committed to providing quality, accessible education through innovative distance learning methodologies. Through the open and distance education from MATS University learners can unlock endless opportunities with flexible, comprehensive open and distance education programmes designed for busy professionals and dedicated learners, so they can Achieve their academic dreams with ease of learning and at their convenience. MATS Centre for Open and Distance Education (MCODE) provides flexible, inclusive, and accessible educational opportunities through distance learning, maintaining rigorous academic standards and global relevance. MCODE

has integrate advanced technologies, innovative pedagogies, and comprehensive support systems that enrich the learning experience with reliability to gain more and more knowledge through the practical approach of learning. MCODE aims to nurture intellectual curiosity, professional competence, and ethical consciousness among learners, preparing them to thrive in the competitive world. Open and Distance Education will enhance employability, entrepreneurial capabilities, and leadership skills by aligning programs with industry and societal needs, ensuring holistic development of students.

MATS Centre for Open and Distance Education vision is be recognized as a benchmark institution for providing accessible, inclusive, and quality-driven open distance education, empowering learners to achieve academic and professional excellence irrespective of their geographical locations. The mission of the MCODE is to improve the quality of education in the area with the help of advanced technology and use of ICT in Open and Distance learning so the learners are aware from the latest technologies and become a skilled professional. Following are the key points about MCODE that makes it unique and futuristics.

- Well-structured, up-to-date materials available digitally & in printed form for easy access.
- Flexible, secure, and user-friendly examination process for a stress-free assessment experience.
- Dedicated helpdesk, online counseling & personalized mentoring for academic queries.
- Access thousands of digital books, journals, and research materials anytime, anywhere.
- State of the art Learners Management System (LMS).
- Dedicated learners support service system to help out the learners in every step of their academic journey.
- Well-designed SLM along with interactive learning methods and techniques, in both the form printed and digital so learners can have ease of access.
- Audio/Video lectures in the form of e-SLM for the learners.
- ICT based contact classes along with doubt clearing sessions.
- Video Conferencing for interactive presentation and live sessions.

- Course content delivery mechanism through use of mail id, websites, various online sources and by postal address.
- We have already run the distance education programme in the previous sessions 2011-13 and 2017-19.

ABOUT PROGRAMME

A. Programme's Mission and Objectives:

Mission:

The mission of the programme Bachelor of Computer Applications (BCA) in Open and Distance Learning mode of Education is to empower students with comprehensive theoretical knowledge and practical skills in computer applications through accessible, flexible, and innovative open and distance learning education, fostering adept professionals for the evolving digital landscape. The programme aims to impart knowledge and skills that enable students to develop, design, and maintain software applications effectively and efficiently.

Objectives:

The Open and Distance Learning mode Bachelor of Computer Applications (BCA) programme is designed to provide students with a strong foundation in computer science, programming, and IT applications. The primary objective of the programme is to develop skilled professionals who can contribute effectively to the IT industry, software development, and technology-driven enterprises.

Key Objectives:

1. **Fundamental Knowledge of Computer Science:** Provide a comprehensive understanding of computer science concepts, including programming, data structures, algorithms, and database management.
2. **Proficiency in Programming & Software Development:** Train students in multiple programming languages such as C, C++, Java, Python, and web technologies to build robust software applications.
3. **Application Development & System Design:** Equip students with the knowledge and skills to design, develop, and maintain software applications, websites, and enterprise solutions.

4. Understanding of Emerging Technologies: Introduce students to Artificial Intelligence, Machine Learning, Cloud Computing, Cybersecurity, and IoT to keep them updated with modern technological advancements.
5. Problem-Solving and Analytical Skills: Enhance logical thinking, problem-solving abilities, and analytical reasoning to tackle real-world IT challenges effectively.
6. Industry Readiness & Practical Exposure: Provide hands-on experience through project-based learning, internships, and industry collaborations to bridge the gap between theoretical knowledge and practical implementation.
7. Entrepreneurship & Innovation: Encourage students to explore entrepreneurial opportunities in IT startups, freelancing, and innovative software solutions.
8. Preparation for Higher Studies & Certifications: Lay a strong foundation for students who wish to pursue higher studies such as BCA, MBA, or certifications in specialized IT domains.

The BCA programme in Open and Distance Learning mode aims to create competent

B. Relevance of the Programme with University's Mission and Goals:

The Open and Distance Learning mode of the BCA programme aligns with MATS's University mission to cultivate a learning environment that fosters creativity, innovation, and critical thinking among students. The programme is designed to provide a world-class education in computer science and applications, with a focus on developing skilled professionals who can make valuable contributions to the industry and society. The BCA programme also aims to provide an inclusive and diverse learning environment, which is essential for the development of professionals who can work effectively in multicultural and global environments. The programme provides opportunities for students to engage in practical and project-based learning, which helps them develop teamwork skills, leadership skills,

and communication skills. These are essential skills that prepare students to become successful professionals in the field of computer science and applications.

C. Nature of Prospective Target Group of Learners:

The programme aims at providing learning opportunities to a diverse group of learners falling under the category of non-traditional learners such as full-time working professionals, entrepreneurs, individuals in remote regions, non-residents and homemakers. The Open and Distance Learning mode of education ODL BCA programme is for students who cannot afford to pursue the education in regular mode due to time, cost and distance constraints.

D. Appropriateness of Programme to be Conducted in Online and Open and Distance Learning Mode to Acquire Specific Skills and Competence:

The open and distance learning BCA program will be delivered with flexibility, allowing students to learn at their own pace while balancing work, family, and education. The learning resources are designed to support self-sufficient, self-directed, and independent learning. The program will be supported by a robust Learning Management System, offering a variety of resources including e-tutorials, e-materials, e-assignments, quizzes, discussion forums for doubt-solving, assessment and progress tracking tools, and display of results.

E. Expected Outcome of the Programme:

“At the end of the programme expected outcomes”

- To acquire a general knowledge, principles and mechanisms of Computer.
- To prepare the learners for employability.
- To acquire a basic knowledge of Subjects.
- To acquire techniques relevant of subjects taught.

PROGRAMME DELIVERY MODE

As the programme will offer in MATS Centre of Open and Distance Education mode, the there are various instructional delivery mechanisms and media will be used to effectively deliver content to the learners. The programme delivery mechanism used by MCDOE follows a multimedia approach for instructions, which are as follows:

- The printed self-learning material (SLM) which covers all the metrics of the programme will be delivered to the learners for every course.
- Learning Management System (LMS) is an online platform that provides a centralized location for students to access learning content, engage in discussions, submit assignments, and take assessments. The LMS provides a user-friendly interface that is accessible on multiple devices, such as desktops, laptops, tablets, and smartphones.
- Webinars can be used for lectures, discussions, or interactive sessions with students. Pre-recorded video lectures can be used to deliver course content in a concise and engaging way. Interactive multimedia includes simulations, games, and quizzes that are designed to reinforce learning.
- Discussion forums can be used to facilitate group discussions, peer-to-peer learning, and to provide feedback and support. Open and face-to-face counselling will be provided by academic counsellors appointed for the programme.
- The counselling sessions are held as per schedule drawn by the MCDOE. These counselling sessions are held in non-working hours for the learners so they can attend the counselling session properly and regularly to enhance their learning skills.
- Live session will be conducted through the use of Internet Communication Technologies (ICT) from the University's studio, the schedule of which is made available at the Learner Support System.
- Programmes which have industrial training/practical/ project component are held at University's learners support centers and Attendance of the learner in this part of the courses is compulsory. As per guidelines Project Work of the programme will be done by the learners and regarding this a complete guide will be delivered to the learner along with study material.
- The SLM will be dispatched periodically to the enrolled learners for each course of the programme. These SLM's will be very helpful to the learners in effective learning. The assignment for internal assessment of learner's shall be delivered to the learners along with the SLM. Online modules are also available in the University's website for some programme.
- The contact classes and counselling schedule will be of 30 days in a year which

will be divided as 15 days in each semester. The schedule of contact classes of the programme shall be communicated to the student through the various medium.

EVALUATION SYSTEM

The eligibility for the admission is passed in graduation examination or equivalent. Learners have the convenience of accessing all the information related to admission procedure and other information through the University's website or by contacting the helpdesk number. They can download the admission form from the university website and send it through either online or offline mode. Upon receipt, the University will scrutinize the documents and process the payment of fees. Once the fees are cleared, the admission will be confirmed, and an enrollment number will be issued to the learner.

- **Examination and Evaluation System:**

Evaluation shall be based on continuous assessment, in which sessional work and the terminal examination shall contribute to the final grade. Sessional work shall consist of class tests, mid-semester examination(s), homework assignments, etc., as determined by the faculty in charge of the courses of study. Progress towards achievement of learning outcomes shall be assessed using the following: time-constrained examinations; closed-book and open-book tests; problem-based assignments; observation of practical skills; individual project reports (case-study reports); team project reports; oral presentations, including seminar presentation; viva voce interviews; computerized adaptive assessment, examination on demand, modular certifications, etc.

Each course shall correspond to an examination paper comprising of external and internal evaluations. The semester end theory examinations for Major, Minor, Open/Generic and DSC (Discipline specific Course) vocational, value added, SEC (Skill Enhancement Course) and AEC (Ability Enhancement Course) shall be of a duration as promulgated through the examination's regulations approved by the Academic Council of the University. The credit structure for theory/Practical/tutorial, internal, external examinations and total marks for an examination shall be as per the programme structure approved by the Academic Council of the University as per UGC norms. Students shall acquire a minimum

passing mark in internal and external examinations separately to be declared as pass in the respective courses, as prescribed by the Academic Council.

1. The academic performance of a candidate shall be evaluated in respect of the courses of study prescribed for each semester through the evaluation. The evaluation of students admitted in the programme shall be based on:
 - 1.1. End Semester Examinations - 70% marks of total marks and
 - 1.2. Continuous Internal Assessment - 30% of total marks
2. The End Semester examinations shall be held as per the academic calendar notified by the University and the duration of end semester examination shall be of three or two hours.
3. The minimum percentage of marks to pass the programme in each semester shall be 40% in each course comprising of end semester examinations and continuous evaluation.
4. A programme shall have a specified number of credits in each semester. The number of credits along with grade points that the student has satisfactorily cleared shall measure the performance of the student
5. Semester examination results shall have following categories:
 - 5.1.1 Passed, i.e., those who have passed in all courses of the semester examination in internal and external examination separately.
 - 5.1.2 Promoted (ATKT), i.e., those who have earned minimum 50% of credits in a particular year including both the semesters (even and odd) or those who have earned any number of credits in odd semester.
 - 5.1.3 Detained, i.e., those who are not promoted as per the above provisions shall be detained. Such students have to appear in the examination of next academic session to earn required credits (excluding the credits already earned) as per the

provisions of this ordinance and only then he/she may continue the programme within stipulated period as per the provisions of this ordinance.

6. However, a student of any semester who has been detained/ not appeared in examination due to less attendance/ not applied for examination/ applied but not appeared shall be out from the programme. Such a student has to take admission in the next session as an ex-student through the procedure adopted/notified by the University.

The Fee Structure of the Programme

NAME OF THE COURSES	DURATION (SEMESTER)	ADMISSION FORM FEE (RS.)	COURSE FEE (PER YEAR)	EXAM FEE (PER YEAR)	TOTAL FEE (PER YEAR)
Bachelor of Computer Applications (BCA)	6	500	17500	3000	21,000

LEARNER SUPPORT DESK:

Contact Person: Dr. Vaibhav Sharma

Phone: 07714078995/96

Email: help@matsodl.com

Director

MATS Centre for Open and Distance Education (MCODE) MATS University

**Address: Aarang-Kharora Highway, Gullu, Aarang, Raipur, Pincode-493 441,
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Phone: 07714078995/96

Teaching and Examination Scheme

Programme: Bachelor of Computer Application (BCA) Sem: I

NHEQF Level: 4.5 Courses					Evaluation Scheme			Total Marks
Course Category	Discipline	Course Category Code	Course Name	Course Code	Credits	CIA	ESE	
Discipline Specific Core Courses (DSCC)	Computer Application	DSC 01	Computer System Architecture and Digital Electronics	ODL BCA DSC 01	3	30	70	100
Discipline Specific Core Courses (DSCC)	Computer Application	DSC 02	Fundamentals of Programming	ODL BCA DSC 02 T	3	30	70	100
Discipline Specific Core Courses (DSCC)			Fundamentals of Programming Lab	ODL BCA DSC 02 P	2	15	35	50
Discipline Specific Core Courses (DSCC)	Computer Application	DSC 03	Database Management System	ODL BCA DSC 03 T	2	15	35	50
Discipline Specific Core Courses (DSCC)			Database Management System Lab	ODL BCA DSC 03 P	2	15	35	50
Generic Elective (GE)	Computer Application	GE 01	Generic Elective - I		4	30	70	100
Skill Enhancement Course (SEC)/Internship	Computer Application	SEC 01	IT Skills	ODL SEC-001	2	15	35	50
Ability Enhancement Course (AEC)	Computer Application	AEC 01	Communication Skill	ODL AEC-001	2	15	35	50
VAC/IKS (Foundation)/IKS(Core)	Computer Application	VAC 01	Yoga and Human Conciseness	ODL VAC-001	2	15	35	50
					22	180	420	600

Generic Elective Courses

Category	Name	Code
Generic Elective - I	Fundamentals of Entrepreneurship	GE004
	Business Organization	GE007

Programme: Bachelor of Computer Application (BCA) Sem: II

NHEQF Level: 4.5 Courses					Evaluation Scheme			Total Marks
Course Category	Discipline	Course Category Code	Course Name	Course Code	Credits	CIA	ESE	
Discipline Specific Core Courses (DSCC)	Computer Application	DSC 04	Object Oriented Programing Concepts	ODL BCA DSC 04 T	3	30	70	100
Discipline Specific Core Courses (DSCC)			Object Oriented Programing Concepts Lab	ODL BCA DSC 04 P	2	15	35	50
Discipline Specific Core Courses (DSCC)	Computer Application	DSC 05	Relational Database Management System	ODL BCA DSC 05 T	3	30	70	100
Discipline Specific Core Courses (DSCC)			Relational Database Management System Lab	ODL BCA DSC 05 P	2	15	35	50
Discipline Specific Core Courses (DSCC)	Computer Application	DSC 06	Operating System Concepts	ODL BCA DSC 06	2	15	35	50
Generic Elective (GE)	Computer Application	GE 02	Generic Elective - II		4	30	70	100
Skill Enhancement Course (SEC)/Internship	Computer Application	SEC 02	Web Designing	ODL SEC-002	2	15	35	50
Ability Enhancement Course (AEC)	Computer Application	AEC 02	Professional Communication Skill	ODL AEC-002	2	15	35	50
VAC/IKS (Foundation)/IKS (Core)	Computer Application	VAC 02	Environmental Studies And Disaster management	ODL VAC-002	2	15	35	50
					22	180	420	600

Generic Elective Courses

Category	Name	Code
Generic Elective - II	Chhattisgarh ki Jan Jatiya Sanskriti	GE017
	Intellectual Property Rights	GE014

Programme: Bachelor of Computer Application (BCA) Sem: III

NHEQF Level: 5 Courses					Evaluation Scheme			Total Marks
Course Category	Discipline	Course Category Code	Course Name	Course Code				
Discipline Specific Core Courses (DSCC)	Computer Application	DSC 07	Data Structure	ODL BCA DSC 07 T	3	30	70	100
Discipline Specific Core Courses (DSCC)			Data Structure Lab	ODL BCA DSC 07 P	2	15	35	50
Discipline Specific Core Courses (DSCC)	Computer Application	DSC 08	Java Programing	ODL BCA DSC 08 T	3	30	70	100
Discipline Specific Core Courses (DSCC)			Java Programing Lab	ODL BCA DSC 08 P	2	15	35	50
Discipline Specific Core Courses (DSCC)	Computer Application	DSC 09	Software Engineering	ODL BCA DSC 09	2	30	70	100
Generic Elective (GE)	Computer Application	GE 03	Generic Elective III		4	30	70	100
Skill Enhancement Course (SEC)/Internship	Computer Application	SEC 03	Python Programing	ODL SEC 003	2	15	35	50
Ability Enhancement Course (AEC)	Computer Application	AEC 03	Presentation Skill	ODL AEC 003	2	15	35	50
VAC/IKS (Foundation)/IKS (Core)	Computer Application	VAC 03	Vedic Mathematics	ODL VAC 003	2	15	35	50
					22	180	420	600

Generic Elective Courses

Category	Name	Code
Generic Elective - III	Organizational Behavior	GE021
	Managerial Economics	GE016

Programme: Bachelor of Computer Application (BCA) Sem: IV

NHEQF Level: 5 Courses					Evaluation Scheme			Total Marks
Course Category	Discipline	Course Category Code	Course Name	Course Code	Credits	CIA	ESE	
Discipline Specific Core Courses (DSCC)	Computer Application	DSC 10	Web Technology	ODL BCA DSC 10 T	3	30	70	100
Discipline Specific Core Courses (DSCC)			Web Technology Lab	ODL BCA DSC 10 P	2	15	35	50
Discipline Specific Core Courses (DSCC)	Computer Application	DSC 11	Data Warehousing and Data Mining	ODL BCA DSC 11 T	3	30	70	100
Discipline Specific Core Courses (DSCC)			Data Warehousing and Data Mining Lab	ODL BCA DSC 11 P	2	15	35	50
Discipline Specific Core Courses (DSCC)	Computer Application	DSC 12	Data Communication and Computer Network	ODL BCA DSC 12	2	15	35	50
Discipline Specific Elective Courses (DSEC)	Computer Application	DSE 01	Elective IV		4	30	70	100
Skill Enhancement Course (SEC)/Internship	Computer Application	SEC 04	Prompt Engineering	ODL SEC 004	2	15	35	50
Ability Enhancement Course (AEC)	Computer Application	AEC 04	Business Communication Skill	ODL AEC 004	2	15	35	50
VAC/IKS (Core)/IKS (Foundation)	Computer Application	VAC 04	Society, Culture and Human Behavior	ODL VAC 04	2	15	35	50
					22	120	420	600

Discipline Specific Elective Courses (DSEC)	Minor Elective IV	Blockchain Technology	BCA DSE 01
	Minor Elective IV	Software Testing Techniques	BCA DSE 02

Programme: Bachelor of Computer Application (BCA) Sem: V

NHEQF Level: 5.5 Courses					Evaluation Scheme			Total Marks
Course Category	Discipline	Course Category Code	Course Name	Course Code	Credits	CIA	ESE	
Discipline Specific Core Courses (DSCC)	Computer Application	DSC 13	Advanced Java Programming	ODL BCA DSC 13 T	3	30	70	100
			Advanced Java Programming Lab	ODL BCA DSC 13 P	2	15	35	50
Discipline Specific Core Courses (DSCC)	Computer Application	DSC 14	Compiler Designing	ODL BCA DSC 14	4	30	70	100
Discipline Specific Core Courses (DSCC)	Computer Application	DSC 15	Cloud Computing Foundations	ODL BCA DSC 15	3	30	70	100
Discipline Specific Elective Courses (DSEC)	Computer Application	DSE 02	Elective V		3	30	70	100
			Elective V Lab		2	15	35	50
Discipline Specific Elective Courses (DSEC)	Computer Application	DSE03	Elective VI		3	30	70	100
Skill Enhancement Course (SEC)/Internship	Computer Application	SEC 05	Internet of Things	ODL BCA SEC 005	2	15	35	50
					22	195	455	650

Discipline Specific Elective Courses (DSEC)	Minor Elective V (ML & AI Specialization)	Introduction to Artificial Intelligence	BCA DSE 03 T
		Introduction to Artificial Intelligence Lab	BCA DSE 03 P
	Minor Elective V (Web Technology Specialization)	ASP.Net Programming Concepts	BCA DSE 04 T
		ASP.Net Programming Concepts Lab	BCA DSE 04 P
	Minor Elective VI	Advanced Operating System	BCA DSE 05
		Advanced Networking	BCA DSE 06

Programme: Bachelor of Computer Application (BCA) Sem: VI

NHEQF Level: 5.5 Courses					Evaluation scheme			Total Marks
Course Category	Discipline	Course Category Code	Course Name	Course Code	Credits	CIA	ESE	
Discipline Specific Core Courses (DSCC)	Computer Application	DSC 16	Advanced Machine Learning	ODL BCA DSC 16 T	3	30	70	100
			Advanced Machine Learning Lab	ODL BCA DSC 16 P	2	15	35	50
Discipline Specific Core Courses (DSCC)	Computer Application	DSC 17	User Interface and User Experience Design	ODL BCA DSC 17 T	3	30	70	100
			User Interface and User Experience Design Lab	ODL BCA DSC 17 P	2	15	35	50
Discipline Specific Core Courses (DSCC)	Computer Application	DSC 18	Green Computing	ODL BCA DSC 18	2	15	35	50
Discipline Specific Elective Courses (DSEC)	Computer Application	DSE 06	Elective VII		2	15	35	50
			Elective VII Lab		2	15	35	50
Ability Enhancement course(AEC)	Computer Application	AEC 05	Corporate Communication Skills	ODL AEC 005	2	15	35	50
Skill Enhancement Course (SEC)/Internship	Computer Application	INT 01	Internship/Project	ODL INT 01	4	50	100	150
					22	200	450	650

Discipline Specific Core Courses (DSCC) Major Elective VI	Major or (ML & AI) Elective VII	Data Analytics and Visualization	BCA DSE 07 T
		Data Analytics and Visualization Lab	BCA DSE 07 P
Discipline Specific Core Courses (DSCC)	Major	Advanced Web Technology	BCA DSE 08 T
Major	(ML & AI)		
Major	Elective VII		
Elective VI		Advanced Web Technology Lab	BCA DSE 08 P

Detailed Syllabus

SYLLABUS			
PROGRAM: BCA		SEMESTER: I	WEF:2024-25
Course Code: ODL BCA DSC 01	Credit:03	Course: Computer System Architecture and Digital Electronics	L:02 T:01 P:00

No.	Module Description	
Module 1:	Computer Organization	
	Unit 1.1:	Introduction of Computers, Characteristics of computers
	Unit 1.2:	Evolution of computer
	Unit 1.3:	Input unit, Output unit and Storage unit
	Unit 1.4:	Arithmetic Logic Unit (ALU), Control Unit (CU), Central Processing Unit (CPU)
	Unit 1.5:	System concepts
	Unit 1.6:	Classification of computers
	Unit 1.7:	Types of Memory: RAM, ROM, PROM, EPROM, EEPROM, Cache
Module 2:	Digital System and Boolean Algebra	
	Unit 2.1:	Overview of digital systems and their application, number system: representation and conversion
	Unit 2.2:	Binary coded decimal (BCD) representation
	Unit 2.3:	Boolean algebra fundamentals
	Unit 2.4:	Basic Theorem and properties of Boolean algebra
	Unit 2.5:	Boolean function
	Unit 2.6:	Canonical and standard forms
Module 3:	Gate-level Minimization	
	Unit 3.1:	Introduction
	Unit 3.2:	The map method
	Unit 3.3:	Karnaugh maps(K-maps) for simplifying Boolean expressions.
	Unit 3.4:	product of sums simplification
	Unit 3.5:	Don't care condition
	Unit 3.6:	NAND and NOR implementation
Module 4:	Computer Software	
	Unit 4.1:	Introduction to Software
	Unit 4.2:	Relationship between Hardware and Software
	Unit 4.3:	Types of Software
	Unit 4.4:	Logical System Architecture
	Unit 4.5:	Firmware, Middleware
	Unit 4.6:	Pre-written Software, Customized Software
	Unit 4.7:	Developing Customized Software
	Unit 4.8:	Software development Life cycle
	Unit 4.9:	Software Engineering
	Unit 4.10:	Introduction to Operating System, Functions of an operating systems
Module 5:	Cyber Security	
	Unit 5.1:	Cyber security: Introduction, Significance, Working of Cyber Security, Challenges,

		Cyber Laws
	Unit 5.2:	Types of cyber-attacks: malware, Phishing, DDoS, Password, Man in the middle, SQL Injections, Prevention from Cyber
	Unit 5.3:	Future Trends in Cyber security: Artificial Intelligence and Machine Learning, Cloud Security, Internet of Things (IoT) Security, Quantum Security, 5G Security.
	Unit 5.4:	Emerging Trends in Digital Media: Influencer Marketing, Omnichannel Marketing, Artificial Intelligence, Deep fake videos, Video Marketing, Metaverse, Chatbots.

Text Books/Resources:

1. Pradeep K. Sinha, "Computer Fundamentals":TB#1
2. E Balagurusamy , "FUNDAMENTALS OF COMPUTERS", Tata McGraw Hill :TB#2
3. M. Morris Mano, "Computer System Architecture":TB#3

Reference Books/Resources

1. https://www.researchgate.net/publication/258339295_FUNDAMENTALS_OF_COMPUTER_STUDIES
2. <https://www.geeksforgeeks.org/computer-fundamentals-tutorial/>
3. <https://www.simplilearn.com/tutorials/cyber-security-tutorial/types-of-cyber-attacks> :RB#4
4. <https://www.zenarmor.com/docs/network-security-tutorials/future-trends-in-cybersecurity> :RB#5
5. <https://emeritus.org/in/learn/digital-marketing-trends/>:RB#6

SYLLABUS			
PROGRAM: BCA		SEMESTER: I	WEF:2024-25
Course Code: ODL BCA DSC 02 T	Credit:03	Course: Fundamentals of Programming	L:02 T:01 P:00

No.	Module Description	
Module 1:	Algorithm, Flow Chart and Programming languages	
	Unit 1.1:	Introduction of algorithm and flowchart
	Unit 1.2:	Type of software and programming languages
	Unit 1.3:	Introduction to C: Program structure, Per processor
	Unit 1.4:	Derivatives, Header files
	Unit 1.5:	Token, Data Type, Format Specifier, Operators
Module 2:	Control Statements, Array and String	
	Unit 2.1:	Control Statements: Definition and types
	Unit 2.2:	Branching, Looping, Jumping Statement and its types
	Unit 2.3:	One dimensional, Two dimensional and Multidimensional Array
	Unit 2.4:	Character Array: Initialization, Reading, writing
	Unit 2.5:	String Manipulation functions
Module 3:	Function and Pointer	
	Unit 3.1:	Function: Introduction, types of functions
	Unit 3.2:	Function: Nested function, Recursion
	Unit 3.3:	Passing array as a function parameter
	Unit 3.4:	Pointer and Array: Pointer Expression, pointer with array and string, Array of Pointer

	Unit 3.5:	Pointer and Function: Pointer as function parameter
Module 4:	Structure and Dynamic Memory Allocation	
	Unit 4.1:	Array of Structure, Array Within Structure
	Unit 4.2:	Structure within structure
	Unit 4.3:	Structure and Function: Structure as a function parameter
	Unit 4.4:	Memory allocation concept
	Unit 4.5:	Dynamic memory allocation: malloc, calloc, free and realloc
Module 5:	File Handling	
	Unit 5.1:	Introduction of file concept: Opening, closing
	Unit 5.2:	Input/output Operation in file
	Unit 5.3:	Error Handling during I/O Operation
	Unit 5.4:	Random Access file

Text Books/Resources:

1. EBalaguruSwami, "Programming in ANSI", Tata McGraw Hills: **TB#1**
2. KR Venugopal and SR Prasad, "Mastering in C", Tata McGraw Hills: **TB#2**

Reference Books/Resources

1. Yashavant Kanetkar, "Let Us C", BPB Publication
2. <https://www.javatpoint.com/c-programming-language-tutorial>
3. <https://www.w3schools.com/c/>

SYLLABUS			
PROGRAM: BCA		SEMESTER: I	WEF: 2024-25
Course Code: ODL BCA DSC 03 T	Credit: 02	Course: Database Management System	L: 03 T: 01 P: 00

No.	Module Description	
Module 1:	Introduction to Database Management System	
	Unit 1.1:	Introduction and purpose of database
	Unit 1.2:	View of Data: Data Abstraction, Instances and Schemas, Data Models
	Unit 1.3:	Database Languages: DDL and DML
	Unit 1.4:	Database Architecture: Two-tier, Three-tier
	Unit 1.5:	Database Users and Administrator: Functions and Roles
	Unit 1.6:	Introduction to Data Mining, Data warehouse, Big Data, Data Analytics
Module 2:	Data Modeling and Database Design	
	Unit 2.1:	Design Process
	Unit 2.2:	E-R Model
	Unit 2.3:	Constraints
	Unit 2.4:	E-R Diagram
	Unit 2.5:	Weak and Strong Entity Set
Module 3:	Relational Database Design	

	Unit 3.1:	Extended E-R Features : Generalization and Specialization
	Unit 3.2:	Constraints on Specialization
	Unit 3.3:	Relational Model Structure
	Unit 3.4:	Database Schema
	Unit 3.5:	Keys: Super, Candidate, Primary, and Foreign key
	Unit 3.6:	Schema Diagram
	Unit 3.7:	Conversion of E-R to Relational Model
PRACTICAL MODULE		
Module 4:	Managing Database and Table	
	Unit 4.1:	Select, Create and Drop Database
	Unit 4.2:	Create, Rename, Alter Table, Truncate and Drop Table
	Unit 4.3:	Data Types: BIT, BOOLEAN, CHAR, VARCHAR, DATE, DATETIME, DECIMAL
	Unit 4.4:	Insert, Update and Delete Records
	Unit 4.5:	Constraint: Primary Key, Foreign Key, UNIQUE Constraint, NOT NULL Constraint, DEFAULT Constraint, CHECK Constraint
Module 5:	Spring and Spring Boot Framework	
	Unit 5.1:	SELECT, ORDER BY, WHERE, SELECT DISTINCT
	Unit 5.2:	Operators: AND, OR, IN, BETWEEN, LIKE, LIMIT, IS NULL
	Unit 5.3:	Numeric, String and Date functions
	Unit 5.4:	Joins: INNER JOIN, LEFT JOIN, RIGHT JOIN, SELF JOIN
	Unit 5.5:	Aggregate F, Functions: GROUP BY, HAVING, MIN (), MAX (), AVG (), SUM (), COUNT ()
	Unit 5.6:	Sub-query

Text Books/Resources:

1. Henry F. Korth, "Database System Concepts", TataMcGrawHills
2. Ivan Bayross, MySQL 5.1 for Professionals, SPD

Reference Books/Resources

1. Elmasri and Navathe, "Fundamentals of Database Systems", Pearson Education.
2. Thomas Connolly and Carolyn Begg, "Database Systems, A Practical Approach to Design Implementation and Management", Pearson Education
3. MySQL Reference <https://www.mysqltutorial.org/>
4. MySQL Reference Manual <https://dev.mysql.com/doc/refman/8.0/en/>

SYLLABUS			
PROGRAM: BCA		SEMESTER: I	WEF: 2024-25
Course Code: GE004	Credit: 04	Course: GE – I / Fundamentals of Entrepreneurship	L: 03 T: 01 P: 00

No.	Module Description
Module 1:	The Entrepreneur

	Unit 1.1:	Definitions and Concept of Entrepreneur, Entrepreneurial Traits, Characteristics and Skills
	Unit 1.2:	Classification of Entrepreneurs, Growth and Nature of Entrepreneurs, Importance of Entrepreneurship
	Unit 1.3:	Entrepreneurial Culture, Types of Entrepreneurs, Distinction between Entrepreneur and Manager
Module 2:	Entrepreneurship Concepts and Women Entrepreneurs	
	Unit 2.1:	Entrepreneurship: Concept, Theories, and Environmental Factors
	Unit 2.2:	Entrepreneurship Development and Training
	Unit 2.3:	Women Entrepreneurs: Concept, Functions, Growth, Problems Faced
Module 3:	Project Identification and Appraisal	
	Unit 3.1:	Project: Concept, Classification, and Search for Business Ideas
	Unit 3.2:	Project Identification, Formulation, and Design
	Unit 3.3:	Project Network Analysis, Report Preparation, and Project Appraisal
Module 4:	Institutional Finance and Ownership Structures	
	Unit 4.1:	Institutional Finance: Role of Commercial Banks and Financial Institutions
	Unit 4.2:	Institutional Support for Small Entrepreneurs
	Unit 4.3:	Ownership Structures: Proprietorship, Partnership, Company, Cooperative – Selection Criteria
Module 5:	Micro, Small & Medium Enterprises (MSME)	
	Unit 5.1:	Introduction to MSME: Classification and Registration
	Unit 5.2:	Ministry of MSME: Government Policies, Start-up vs. MSME, Major Schemes
	Unit 5.3:	PMEGP: Objectives, Benefits, Applicability; SRI Fund: Structure and Objectives; Steps to Start an MSME; Case Study

Text Books/Resources:

1. The Dynamics of Entrepreneurial Development and Management, Vasant Desai, Himalaya Publishing House, 6th edition, 2018.

Reference Books/Resources

1. Entrepreneur Development, Satish Taneja, Himalaya Publishing House, 1st edition, 2015.
2. Entrepreneur Development, Dr. S.S. Khanka, S. Chand, 5th Edition, 2012.
3. Entrepreneur Development, Kumar, latest edition, reprint 2003.

SYLLABUS			
PROGRAM: BCA		SEMESTER: I	WEF:2024-25
Course Code: BCOM DSC 003	Credit:04	Course: GE – I / Business Organization	L:03 T:01 P:00

No.	Module Description
Module 1:	Introduction to Business and Organization

	Unit 1.1:	Business: Meaning, Nature, Objectives, Social Responsibility
	Unit 1.2:	Essentials of a Successful Business, Functional Areas of Business
	Unit 1.3:	Concept of Business Organization
Module 2:	Forms of Private Sector Enterprises	
	Unit 2.1:	Sole Proprietorship: Meaning, Features, Merits and Demerits
	Unit 2.2:	Partnership: Meaning, Features, Merits and Demerits
	Unit 2.3:	Joint Stock Company: Meaning, Features, Merits and Demerits
	Unit 2.4:	Co-operatives: Meaning, Features, Merits and Demerits
Module 3:	Government Departmental Undertakings	
	Unit 3.1:	Departmental Undertakings: Meaning, Features, Merits and Demerits
Module 4:	Other Forms of Public Enterprises	
	Unit 4.1:	Public Corporations: Meaning, Features, Merits and Demerits
	Unit 4.2:	Government Companies: Meaning, Features, Merits and Demerits
Module 5:	Business Combinations	
	Unit 5.1:	Business Combinations: Meaning, Reasons, and Types
	Unit 5.2:	Forms, Merits, and Demerits of Business Combinations
	Unit 5.3:	Recent Trends in Business Combinations

Text Books/ Reference Books:

1. C B. Gupta - Business Organisation and Management, Sultan Chand & Sons.
2. Dr. S. C. Saxena - Business Administration & Management, Sahitya Bhawan.
3. M. C. Shukla - Business Organisation and Management. S Chand & Company Pvt. Ltd.
4. S.A Sherlekar - Business Organization, Himalaya Publishing House.
5. Y.K. Bhushan. Fundamentals of Business Organisation and Management, Sultan Chand & Sons.
6. R.K. Sharma, Business Organisation & Management Kalyani Publishers
7. Dr. I.M. Sahai, Dr. Padmakar Asthana, 'Business Organisation & Administration', Sahitya Bhawan Publications Agra.

SYLLABUS			
PROGRAM: BCA		SEMESTER: I	WEF:2024-25
Course Code: ODL SEC-001	Credit:02	Course: IT Skills	L:00 T:00 P:02

No.	Module Description	
Module 1:	Word Processing	
	Unit 1.1:	Working With Document: Opening, Saving and Editing Files, Inserting, Deleting Files
	Unit 1.2:	Margins: Converting Files to Different Format Using Tools Bar
	Unit 1.3:	Page Style, Alignment -Indents, Line Space, Border and Shading
	Unit 1.4:	Header and Footer Setting
	Unit 1.5:	Drawing: Inserting Clip Arts Pictures/Files Etc.
	Unit 1.6:	Word Completion: Spell Checks
	Unit 1.7:	Mail Merging
Module 2:	Spread Sheet	
	Unit 2.1:	Spread Sheet and Its Applications

	Unit 2.2:	Working With Spreadsheet: Opening, Saving, File Setting
	Unit 2.3:	Spreadsheet Addressing: Rows, Columns and Cells, Referring Cells
	Unit 2.4:	Inserting Data: Insert Cells, Columns, Rows and Sheets
	Unit 2.5:	External Files: Frames Clipart, Pictures etc.
	Unit 2.6:	Formula Tab
Module 3:	Presentation	
	Unit 3.1:	Introduction To Presentation: Opening New Presentation
	Unit 3.2:	Selecting Presentation Layout
	Unit 3.3:	Adding Text to the Presentation
	Unit 3.4:	Header And Footer
	Unit 3.5:	Slide Layout
	Unit 3.6:	Adding Graphics to the Presentation, Setting Animation and Transition Effect
Module 4:	HTML Basics	
	Unit 4.1:	Introduction Of HTML, Elements Of HTML
	Unit 4.2:	Attributes, Headings, Paragraph, Styles Of HTML
	Unit 4.3:	CSS, Tables
	Unit 4.4:	HTML Class, Id
	Unit 4.5:	HTML Responsive
	Unit 4.6:	HTML Forms
Module 5:	Web Designing	
	Unit 5.1:	Introduction to Web Designing Tool
	Unit 5.2:	Admin and General Site Settings
	Unit 5.3:	Writing Post and Formatting Text
	Unit 5.4:	Publishing a Post
	Unit 5.5:	Adding Image and Managing Media Library and Creating Links

Text Books/Resources:

1. Top help topics – Microsoft Support
2. <https://www.w3schools.com/html/>

Reference Books/Resources

1. <https://www.tutorialspoint.com/wordpress/index.htm>

SYLLABUS			
PROGRAM: BCA		SEMESTER: I	WEF:2024-25
Course Code: ODL AEC-001	Credit:02	Course: Communication Skill	L:01 T:01 P:00

No.	Module Description	
Module 1:	Basics of Communication	
	Unit 1.1:	Communication: An Introduction
	Unit 1.2:	Definition and Scope

	Unit 1.3:	Process of Communication
	Unit 1.4:	Barriers to Communication
	Unit 1.5:	Types of Communication
Module 2:	Writing Skills	
	Unit 2.1:	Letter Writing- Formal and Informal
	Unit 2.2:	CV, Email, Message
	Unit 2.3:	Minutes, Report Writing
	Unit 2.4:	Notice, Memoranda
Module 3:	Reading Skills	
	Unit 3.1:	Types of Readings
Module 4:	Listening Skills	
	Unit 4.1:	Effective listening
	Unit 4.2:	Barriers to listening
Module 5:	Speaking Skills	
	Unit 5.1:	Introduction to Soft Skills
	Unit 5.2:	Personality Development
	Unit 5.3:	Time Management/leadership Skills
	Unit 5.4:	Interviews/ Group Discussion/Presentation Skills
	Unit 5.5:	Short Speech

Text Books/Resources:

1. Brown, Ralph: Making Business Writing Happen: A Simple and Effective Guide to Writing Well. Sydney: Allen and Unwin, 2004.
2. Buscemi, Santi and Charlotte Smith, 75 Readings Plus. Second Edition New York: McGraw-Hill, 1994.
3. Mohan Krishna C Banerji, Meera : Developing Communication Skills. New Delhi: Macmillan India, 1990.

SYLLABUS			
PROGRAM: BCA		SEMESTER: I	WEF: 2024-25
Course Code: ODL VAC-001	Credit: 02	Course: Yoga and Human Conciseness	L: 02 T: 00 P: 00

No.	Module Description	
Module 1:	Introduction to Yoga	
	Unit 1.1:	Meaning and definitions of Yoga
	Unit 1.2:	Importance of Yoga as art, science and philosophy
	Unit 1.3:	Yogic Diet
Module 2:	Philosophical Perspective of Yoga	
	Unit 2.1:	Yoga in Bhagavad Gita: Karma Yoga, Raja Yoga, Jnana Yoga and Bhakti Yoga
	Unit 2.2:	The 'Yoga Sutras' in general; its significance in life.
	Unit 2.3:	Limbs/parts of yoga (Astanga Yoga) according to the 'Yoga Sutras'

	Unit 2.4:	Concept of Ishwara; Ishwara in Yoga Philosophy
Module 3:	Yogic Practices for Health & Wellness	
	Unit 3.1:	Asana, its classification and effects
	Unit 3.2:	Pranayama, its types and effects
	Unit 3.3:	Kriya, Mudra and Bhandha: Procedure and Effects
	Unit 3.4:	Yoga Vs Physical Exercise
Module 4:	Human Consciousness & Meditation	
	Unit 4.1:	Meaning & Definition of Human Consciousness.
	Unit 4.2:	Need for Study of Human Consciousness.
	Unit 4.3:	Current Crisis of Human Consciousness & Measures for Meaning full solution.
	Unit 4.4:	The Theory of Meditation- Japa Meditation, Ajapajapa Meditation, Yoga Nindra, Tratak.
Module 5:	Yoga Practice	
	Unit 5.1:	Suryanamskara – (12 counts) (Practical) Asana - Standing: -Tadasana, Ardhakatichakrasana, Ardhachakrasana, Trikonasana, Vrikshasana. Sitting: - Vajrasana, Padmasana, Goumukhasana, Paschimottanasana, Shashankasana. Lying Supine Position: - Shavasana, Setubandhasana, Chakrasana, Sarvangasana, Halasana. Lying Prone Position - Makarasana, Bhujangasana, Shalabhasana, Dhanurasana, Naukasana.
	Unit 5.2:	Pranayama: Nadishodhana, Suryabhedana, Chandrabhedana, Shitali, Bhastrika, Bhramari.
	Unit 5.3:	Bandh & Mudra: Jalandharabandha, Uddiyanbandha, Moolabandha, Yogamudra, Viparitkarnimudra, Shambhavamudra
	Unit 5.4:	Dhyana and its forms

Text Books /Reference Books:

1. Holistic Approach of Yoga- G. Shankar: AdityaPublishers
2. Patanjali'sYogaSutra–TranslationandCommentary-Dr.P.V. Karambelkar:Lonavla
3. Guidelines to Yogic Practices – M.L.Gharote:Lonavla
4. Yoga and Indian Philosophy – Karel Werner: MotilalBanarsidass
5. Yoga: The Path to Holistic Health- B.K.S. Iyenger: Dorling Kindersley Limited

Reference Books/Resources

2. Bruce Eckel, "THINKING IN JAVA", PEARSON
3. JDK Release Notes - <https://www.oracle.com/java/technologies/javase/jdk-relnotes-index.html>
4. JavaFX - <https://jenkov.com/tutorials/javafx/index.html>

SYLLABUS

PROGRAM: BCA

SEMESTER: II

WEF:2024-25

Course Code: ODL BCA DSC 04 T	Credit:03	Course: Object Oriented Programing Concepts	L:03 T:01 P:00
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No.	Module Description	
Module 1:	Object Oriented Concepts	
	Unit 1.1:	Features And Structure of C++ Program
	Unit 1.2:	Object Oriented Programming Concepts, Advantage
	Unit 1.3:	Object and Class
	Unit 1.4:	Member Function
	Unit 1.5:	Array within the Class
Module 2:	Functions, Constructors, Destructors	
	Unit 2.1:	Memory Allocation of Objects
	Unit 2.2:	Friend Function
	Unit 2.3:	Local Class
	Unit 2.4:	Constructors: Parameterized, Multiple, Default Argument
	Unit 2.5:	Dynamic Initialization of Objects, Copy Constructor, Dynamic Constructor
	Unit 2.6:	Destructors
Module 3:	Operator Overloading and Inheritance	
	Unit 3.1:	Operator Overloading: Unary and Binary
	Unit 3.2:	Overloading Binary Operators Using Friends
	Unit 3.3:	Rules of Overloading Operators, Type Conversion
	Unit 3.4:	Inheritance, Derived Classes
	Unit 3.5:	Inheritance: Single, Multilevel, Multiple.
	Unit 3.6:	Virtual Base Classes, Abstract Class
	Unit 3.7:	Constructors In Derived Classes, Member Classes
Module 4:	Pointer, Virtual Function and Polymorphism	
	Unit 4.1:	Pointers: Pointers To Objects, This Pointer
	Unit 4.2:	Pointer To Derived Classes
	Unit 4.3:	Virtual Function, Pure Virtual Function
	Unit 4.4:	Polymorphism: Compile Time, Run Time
	Unit 4.5:	Overloading and overriding
Module 5:	Console I/O Operations and File Handling	
	Unit 5.1:	Stream Classes
	Unit 5.2:	I/O Operations: Unformatted and Formatted
	Unit 5.3:	Managing Output with Manipulators
	Unit 5.4:	Classes For File Stream Operations
	Unit 5.5:	Opening and Closing a File, Detecting End-of-File
	Unit 5.6:	File Modes, File Pointers and Their Manipulations
	Unit 5.7:	Sequential Input and Output Operations
	Unit 5.8:	Random Access File

	Unit 5.9:	Error Handling During File Operations
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Text Books/Resources:

1. 1. E. BALAGURUSAMY, "Object Oriented Programming with C++", Tata McGraw- Hill: **TB#1 Reference Books/Resources**

1. HerbertSchildt, "TheCompleteReference" Tata McGraw-Hill
2. RobertLafore, "ObjectOrientedProgramminginTurboC++" TheWaiteGroup
3. Programming in Modern C++ NPTEL SWAYAM: https://onlinecourses.nptel.ac.in/noc23_cs78/previewC++Tutorialhttps://www.javatpoint.com/cpp-tutorial

SYLLABUS			
PROGRAM: BCA		SEMESTER: II	WEF:2024-25
Course Code: ODL BCA DSC 05 T	Credit:03	Course: Relational Database Management System	L:02 T:01 P:00

No.	Module Description	
Module 1:	Relational Database Design	
	Unit 1.1:	E.F. Codd's Rule
	Unit 1.2:	Functional dependency, Armstrong's Inference rules
	Unit 1.3:	Decomposition of Relations: Lossless Join and Dependency Preservation Property
	Unit 1.4:	Normalization: First, Second and Third Normal Form
	Unit 1.5:	Denormalization
Module 2:	Procedural SQL	
	Unit 2.1:	Compound statements and labels
	Unit 2.2:	Overview of Control and Iterative statements: IF, CASE, LEAVE, WHILE, LOOP
	Unit 2.3:	Cursors: OPEN, CLOSE and FETCH
	Unit 2.4:	User Defined Function: Need, RETURN statement
	Unit 2.5:	Stored Procedure: Need and usage
Module 3:	Triggers	
	Unit 3.1:	Triggers and their usage
	Unit 3.2:	Trigger Activation
	Unit 3.3:	BEFORE and AFTER trigger
	Unit 3.4:	COMMIT, ROLLBACK, SAVEPOINT
Module 4:	Transaction Processing	
	Unit 4.1:	Transaction: Introduction, Transaction Model
	Unit 4.2:	Properties of Transactions
	Unit 4.3:	Transaction isolation, Schedules: Serial, Non-Serial Schedules
	Unit 4.4:	Serializability, Conflict Serializability
Module 5:	Concurrency Control	
	Unit 5.1:	Concurrent Transactions: Purpose

	Unit 5.2:	Concurrency Control Protocol: Two Phase Locking(2PL) Protocol
	Unit 5.3:	Strict 2PL, Conservative 2PL
	Unit 5.4:	Deadlock and Starvation
	Unit 5.5:	Deadlock Detection and Resolution: Wait-for graph

Text Books/Resources:

1. Henry F. Korth, "Database System Concepts", TataMcGrawHills
2. IvanBayross,MySQL5.1forProfessionals, SPD

Reference Books/Resources

1. ElmasriandNavathe,"FundamentalsofDatabaseSystems",PearsonEducation.
2. ThomasConnollyandCarolynBegg,"DatabaseSystems,APracticalApproach to Design Implementation and Management", PearsonEducation
3. MySQL Reference<https://www.mysqltutorial.org/>
4. MySQL Reference Manual -<https://dev.mysql.com/doc/refman/8.0/en/>

SYLLABUS			
PROGRAM: BCA		SEMESTER: II	WEF:2024-25
Course Code: ODL BCA DSC 06	Credit:02	Course: Operating System Concepts	L:02 T:00 P:00

No.	Module Description	
Module 1:	Definition to Operating System	
	Unit 1.1:	Definition and function of an operating system
	Unit 1.2:	Types of operating system: batch, time-sharing, real-time, distributed, embedded
	Unit 1.3:	System call and interface
	Unit 1.4:	The role of OS in a computing environment
	Unit 1.5:	OS structure: Monolithic, microkernel, hybrid architectures
Module 2:	Operating System Services	
	Unit 2.1:	Process management and scheduling
	Unit 2.2:	Memory management
	Unit 2.3:	File systems
	Unit 2.4:	I/O management
	Unit 2.5:	Device drivers
	Unit 2.6:	Security and protections
Module 3:	Processes and Threads	
	Unit 3.1:	Concept of processes, threads, and programs
	Unit 3.2:	Process state model
	Unit 3.3:	Process scheduling and CPU scheduling algorithms
	Unit 3.4:	Context switching

	Unit 3.5:	Threads: user vs kernel threads, thread libraries
Module 4:	Linux OS	
	Unit 4.1:	Introduction to Linux
	Unit 4.2:	Linux File System & Directory Structure
	Unit 4.3:	Linux commands: Basic Linux Commands, User & Group Management, Process Management
	Unit 4.4:	Shell scripting: Basics of Shell Scripting, Variables, Loops, and Conditional Statements, Creating and Executing Scripts
	Unit 4.5:	VI Editor

Text Books/Resources:

1. Abraham Silberschatz, Peter B Galvin, and Gerg Gagne – “Operating System Concepts”, Wiley.

SYLLABUS			
PROGRAM: BCA		SEMESTER: II	WEF:2024-25
Course Code: GE007	Credit:04	Course: GE-II / Chhattisgarh ki Jan Jatiya Sanskriti	L:02 T:01 P:00

अनुक्रमणिका			
माड्यूल	विषय		
माड्यूल - 1	छत्तीसगढ़ की जनजातियाँ		
	इकाई - 1	- परिभाषा - विशेषताएँ	
	इकाई - 2	- प्रमुख जनजातयों के नाम - कला और संस्कृत	
	इकाई - 3	- छत्तीसगढ़ राज्य में अनुसूचित जनजातयों की सूची - जनजातीय विकास एंडों सिकांिी य जनाएँ	
माड्यूल -2	जनजातीय विकास		
	इकाई - 4	- जनजातीय विकास के मुख्य पहलू - जनजातीय विकास में अनुसूचितयों	
	इकाई - 5	- जनजातीय विकास केवलए नीवतयों और कार्यक्रम - छत्तीसगढ़ में जनजातीय विकास	
	इकाई - 6	- औद्योगिकीकरण और शहरीकरण का जनजातीय समाज पर प्रभाव - जनजातीय समाज के संरक्षण और संवर्धन की योजनाएँ	
माड्यूल -3	जनजातीय सामाजिक संगठन		
	इकाई - 7	जनजातीय सामावजक संगठन का महत्व	
	इकाई - 8	- जनजातीय समाज की संरचना और पारिवारिक व्यवस्था, - छत्तीसगढ़ में जनजातीय महलओं की स्थिति और उनकी भूमिका	

	इकाई - 9	• जनजावतय ों में अोंतजायतीय औ अोंतिजातीय सोंबोर्
माड्यूल 4	छत्तीसगढ़ के आभूषण, विाद्ययंत्र वयंजन	
	इकाई - 10	• आभूषण का सामान्य परििय • प्रमुख जनजातीय आभूषण
	इकाई - 11	• छत्तीसगढ़ के प्रमुख जनजातीय विाद्ययंत्र
	इकाई - 12	• छत्तीसगढ़ का पािों परिक भ जन औ व्योजन • त्य हाि से जुडे विशेष व्योजन
माड्यूल - 5	छत्तीसगढ़ की लोककला एिं संस्कृि	
	इकाई - 13	• छत्तीसगढ़ का जनजातीय हस्तवशल्य एक विसृत परििय • छत्तीसगढ़ की पािों परिक िेशभूषा
	इकाई - 14	• छत्तीसगढ़ के ल कगीत कहावनयाँ औ मौखक पिंपिऐँ • आर्ुवनक समय में जनजातीय सोंस्कृ वत पि पडता प्रभाि

SYLLABUS			
PROGRAM: BCA		SEMESTER: II	WEF:2024-25
Course Code:	Credit:04	Course: GE-II / Intellectual Property Rights	L:02 T:01 P:00

No.	Module Description	
Module 1:	Introduction to IPR and Global Organizations	
	Unit 1.1:	History of IPR in India, Introduction to Intellectual Property, Types and Forms of IPR
	Unit 1.2:	Protection of IPR, Benefits and Problems of IPR
	Unit 1.3:	WTO, GATT, TRIPS, WIPO – Role and Significance
Module 2:	Indian Patent System and Plant Rights	
	Unit 2.1:	History of Indian Patent Law, Authorities, Requirements, Types, Patentable and Non-Patentable Items
	Unit 2.2:	Patent Filing Procedures and Patents in India
	Unit 2.3:	Plant Breeder's Right (PBR): Requirements, Farmer's Rights, Advantages, ITPGRFA
Module 3:	Patents in Biotechnology	
	Unit 3.1:	Patents for Living Organisms and Biological Materials
	Unit 3.2:	Importance of Patents in Biology and Biotechnology
	Unit 3.3:	Social Issues and Controversies Related to Biological Patents
Module 4:	Bioethics and Cloning	
	Unit 4.1:	Introduction to Bioethics, Relation with Other Fields, Applications
	Unit 4.2:	GM Foods and Crops: Health Outcomes and Regulations
	Unit 4.3:	Animal and Human Cloning: Types, Applications, Ethical and Legal Aspects
Module 5:	Clinical Trials, Biosafety & Regulations	
	Unit 5.1:	Clinical Trials: Benefits, Risks, Ethical Concerns in Human Participation
	Unit 5.2:	Human Genome Project: Ethical Implications
	Unit 5.3:	Biosafety: Applications, Levels, Guidelines, Hazardous Material Handling, GLP & GMP

Text Books/Resources:

1. Bioethics and Biosafety: M K Satheesh
2. Biotechnology and Patent Protection: Beier FK, Crespi RS and Straus
3. Intellectual Property Rights on Biotechnology: Singh K
4. Biotechnology Expanding Horizons: B D Singh
5. Textbook of Biotechnology: R C Dubey
6. Bioethics and Biosafety: M K Satheesh
7. A Textbook of biotechnology: R C Dubey
8. Biotechnology: Expanding Horizons: B D Singh.
9. Regulatory Framework for GMOs in India: Ministry of Environment and Forest, Govt. of India
10. Cartagena Protocol on Biosafety: Ministry of Environment and Forest, Govt. of India
11. Bioethics: Shaleesha A Stanley

SYLLABUS			
PROGRAM: BCA		SEMESTER: II	WEF:2024-25
Course Code: ODL SEC 002	Credit:02	Course: Web Designing	L:03 T:01 P:00

No.	Module Description	
Module 1:	Introduction to Web Design	
	Unit 1.1:	WWW, Working of Websites
	Unit 1.2:	Web designing process, UX AND UI
	Unit 1.3:	Front End, Back End, Client and Server Scripting Languages
	Unit 1.4:	Responsive Web Designing
	Unit 1.5:	Types of Websites (Static and Dynamic Websites)
Module 2:	HTML Concepts	
	Unit 2.1:	Introduction to HTML, HTML Editor, HTML Basics
	Unit 2.2:	HTML Elements and Attributes
	Unit 2.3:	Heading, Types of Heading, Paragraphs, Style
	Unit 2.4:	Formation, Quotations, Comments
	Unit 2.5:	Links, Colors, Images
	Unit 2.6:	List, Tables
	Unit 2.7:	Forms, Form Elements, Input types, Text Input, Text Area, Dropdown, Radio buttons, Check boxes, Submit and Reset Buttons.
Module 3:	CSS Concepts	
	Unit 3.1:	Introduction to CSS, Types of CSS
	Unit 3.2:	Selectors, Comments, Colors
	Unit 3.3:	Background, Borders, Margins, Padding, Height/Width
	Unit 3.4:	Box Model, Outline, Text, Fonts, Icons
	Unit 3.5:	Link, Lists, Tables, Displays
	Unit 3.6:	Positions, Overflow, Float, inline-block

	Unit 3.7:	CSS Menu Design CSS Image Gallery
Module 4:	Web Publishing and Browsing	
	Unit 4.1:	Overview, SGML (Standard Generalized Markup Language)
	Unit 4.2:	Web hosting Basics, Components of Web Publishing
	Unit 4.3:	Web Page Design Considerations and Principles
	Unit 4.4:	Search and Meta Search Engines
	Unit 4.5:	WWW, Browser, HTTP, Publishing Tools

Text Books/Resources:

1. IvanByross, "WebEnabledCommercialApplicationDevelopmentUsing. HTML, JavaScript, DHTML and PHP ", BPB Publication#TB1
2. <https://www.w3schools.com/>
3. <https://www.tutorialspoint.com/index.htm>

Reference Books/Resources

1. DTEditorial, "WebTechnology:BlackBook", dreamteach
2. ThomasA.Powell, "TheCompleteReferenceHTML&CSS", McGrawHill

SYLLABUS			
PROGRAM: BCA		SEMESTER: II	WEF:2024-25
Course Code: ODL AEC 002	Credit:02	Course: Professional Communication Skill	L:02 T:01 P:00

No.	Module Description	
Module 1:	INTRODUCTION TO FUNDAMENTALS OF COMMUNICATION	
	Unit 1.1:	Listening –for general information-specific details- conversation: Introduction to classmates - Audio/ video (formal & informal); Telephone conversation; Listening to voicemail & messages; Listening and filling a form
	Unit 1.2:	Speaking - Self Introduction; Introducing a friend; Conversation- politeness strategies; Telephone conversation; Leave a voicemail; Leave a message with another person; asking for information to fill details in a form.
	Unit 1.3:	Reading - Reading brochures (technical context), telephone messages / social media messages relevant to technical contexts and emails.
	Unit 1.4:	Writing - Writing emails / letters introducing oneself
	Unit 1.5:	Grammar - Present Tense (simple and progressive); Question types: What / Yes or No/ and Tags
	Unit 1.6:	Vocabulary - Synonyms; One word substitution; Abbreviations & Acronyms (as used in technical contexts).
Module 2:	NARRATION AND SUMMATION	
	Unit 2.1:	Listening to podcasts, anecdotes / stories / event narration; documentaries and interviews with celebrities.
	Unit 2.2:	Narrating personal experiences / events; Interviewing a celebrity; Reporting / and summarizing documentaries / podcasts/ interviews.
	Unit 2.3:	Reading biographies, travelogues, newspaper reports, Excerpts from literature,

		travel & technical blogs.
	Unit 2.4:	Guided writing-- Paragraph writing Short Report on an event (field trip etc.)
	Unit 2.5:	Past tense (simple); Subject-Verb Agreement; and Prepositions
	Unit 2.6:	Word forms (prefixes & suffixes); Synonyms and Antonyms. Phrasal verbs
Module 3:	DESCRIPTION OF A PROCESS / PRODUCT	
	Unit 3.1:	Listen to product and process descriptions; a classroom lecture; and advertisements about products.
	Unit 3.2:	Picture description; giving instruction to use the product; Presenting a product; and summarizing a lecture.
	Unit 3.3:	Reading advertisements, gadget reviews; user manuals.
	Unit 3.4:	Writing definitions; instructions; and Product /Process description.
	Unit 3.5:	Compound Nouns, Homonyms; and Homophone
Module 4:	CLASSIFICATION AND RECOMMENDATIONS	
	Unit 4.1:	Listening to TED Talks; Scientific lectures; and educational videos.
	Unit 4.2:	Small Talk; Mini presentations and making recommendations.
	Unit 4.3:	Reading –Newspaper articles; Journal reports –and Non-Verbal Communication (tables, pie charts etc,)
	Unit 4.4:	Writing–Note-making/Note-taking
	Unit 4.5:	Grammar –Articles; Pronouns - Possessive & Relative pronouns.
	Unit 4.6:	Vocabulary - Collocations; Fixed / Semi fixed expressions.
Module 5:	EXPRESSION	
	Unit 5.1:	Listening to debates/ discussions; different viewpoints on an issue; and panel discussions
	Unit 5.2:	Speaking –group discussions, Debates, and Expressing opinions through Simulations & Role play.
	Unit 5.3:	Reading –Reading editorials; and Opinion Blogs;
	Unit 5.4:	Writing –Essay Writing (Descriptive or narrative).
	Unit 5.5:	Grammar –Future Tenses, Punctuation; Negation(Statements & Questions);Simple, Compound & Complex
	Unit 5.6:	Vocabulary- Cause & Effect Expressions– Contents Function words.

Text Books/Resources:

1. English for Engineers & Technologists Orient Blackswan Private Ltd. Department of English, Anna University, (2020 edition)
2. English for Science & Technology Cambridge University Press, 2021.
3. Authored by Dr. Veena Selvam, Dr. Sujatha Priyadarshini, Dr. Deepa Mary Francis, Dr.KN.
4. Shoba, and Dr. Lourdes Joevani, Department of English, Anna University.

Reference Books/Resources

1. Technical Communication– Principles and Practices By Meenakshi Raman &Sangeeta Sharma, Oxford Univ. Press, 2016, NewDelhi.
2. A Course Book on Technical English By Lakshmi Narayanan, Scitech Publications(India) Pvt. Ltd.
3. English For Technical Communication (With CD) By Aysha Viswamohan, McGrawHill Education, ISBN :0070264244.
4. Effective Communication Skill, Kulbhusan Kumar, R S Salaria, Khanna PublishingHouse.
5. Learning to Communicate – Dr. V. Chellammal,Allied Publishing House, NewDelhi,2003.

SYLLABUS

PROGRAM: BCA

SEMESTER: II

WEF:2024-25

Course Code: ODL VAC 002

Credit:02

**Course: Environmental Studies and
Disaster management**

L:02 | T:01 | P:00

No.	Module Description	
Module 1:	Environment	
	Unit 1.1:	The Atmosphere, Lithosphere, Hydrosphere
	Unit 1.2:	Ecosystem: Energy flow in the ecosystem
	Unit 1.3:	Water Cycle, Carbon Cycle, Nitrogen Cycle
	Unit 1.4:	Environmental Laws
	Unit 1.5:	Water Pollution, Air Pollution, Soil Pollution, Industrial Pollution, Light Pollution, Sound Pollution.
Module 2:	Climate Change & Sustainable Development	
	Unit 2.1:	Population Ecology
	Unit 2.2:	Climate Change: Cause, Effect, Global Warming
	Unit 2.3:	Environmental protection: Step taken towards Sustainable Development
	Unit 2.4:	Promotion of Electrical Vehicles
	Unit 2.5:	Brief idea on Sustainable Development Goals (SDGs)
	Unit 2.6:	Carbon Footprint and environmental protection
Module 3:	Disaster Management	
	Unit 3.1:	Disaster Management: Types of Disasters
	Unit 3.2:	Vulnerability Assessment and Risk Analysis
	Unit 3.3:	Institutional Framework
	Unit 3.4:	National Disaster Management Authority (NDMA)
	Unit 3.5:	Chhattisgarh State Disaster Management Authority (CSDMA)
	Unit 3.6:	District Disaster Management Plan-(DDMP) Raipur
	Unit 3.7:	Preparedness Measure and Survival skills adopted during and after disaster.
Module 4:	Public Health Management	
	Unit 4.1:	Epidemics and Pandemics Non-Communicable Diseases
	Unit 4.2:	Communicable Diseases with special reference to Covid- 19, Flu, Hepatitis, AIDS and Tuberculosis
	Unit 4.3:	Control Measures (Surveillance, Isolation, Contact Tracing)
	Unit 4.4:	Incubation Period
	Unit 4.5:	Life Style Management

Counselling and Study Hours

Counselling Sessions Study Structure in Hours								
Course Name	Course Code	Credits	Total Study Hours	Face to Face Counselling	Self-Study	Practical Work	Assignments	Project
Semester I								
Computer System Architecture and Digital Electronics	ODL BCA DSC 01	3	90	12	48	0	30	0
Fundamentals of Programming	ODL BCA DSC 02 T	3	90	12	48	0	30	0
Fundamentals of Programming Lab	ODL BCA DSC 02 P	2	60	6	4	40	10	0
Database Management System	ODL BCA DSC 03 T	2	60	10	30	0	20	0
Database Management System Lab	ODL BCA DSC 03 P	2	60	6	4	40	10	0
Generic Elective - I		4	120	16	68	0	36	0
IT Skills	ODL BCA SEC- 001	2	60	10	30	0	20	0
communication Skill	ODL BCA AEC- 001	2	60	10	30	0	20	0
Yoga and Human Conciseness	ODL BCA VAC- 001	2	60	6	4	40	10	0
Total		22	660	88	266	120	186	0

Course Name	Course Code	Credits	Total Study Hours	Face to Face Counselling	Self-Study	Practical Work	Assignments	Project
Semester II								
Object Oriented Programing Concepts	ODL BCA DSC 04 T	3	90	12	48	0	30	0
Object Oriented Programing Concepts Lab	ODL BCA DSC 04 P	2	60	6	4	40	10	0
Relational Database Management System	ODL BCA DSC 05 T	3	90	12	48	0	30	0
Relational Database Management System Lab	ODL BCA DSC 05 P	2	60	6	4	40	10	0
Operating System Concepts	ODL BCA DSC 06	2	60	10	30	0	20	0
Generic Elective - II		4	120	16	68	0	36	0
Web Designing	ODL BCA SEC-002	2	60	10	30	0	20	0
Professional Communication Skill	ODL BCA AEC-002	2	60	10	30	0	20	0
Environmental Studies And Disaster management	ODL BCA VAC-002	2	60	10	30	0	20	0
Total		22	660	92	292	80	196	0

Counselling Sessions Study Structure in Hours

Course Name	Course Code	Credits	Total Study Hours	Face to Face Counselling	Self-Study	Practical Work	Assignments	Project
Semester III								
Data Structure	ODL BCA DSC 07 T	3	90	12	48	0	30	0
Data Structure Lab	ODL BCA DSC 07 P	2	60	6	4	40	10	0
Java Programing	ODL BCA DSC 08 T	3	90	12	48	0	30	0
Java Programing Lab	ODL BCA DSC 08 P	2	60	6	4	40	10	0
Software Engineering	ODL BCA DSC 09	2	60	10	30	0	20	0
Generic Elective III		4	120	16	68	0	36	0
Python Programing	ODL BCA SEC 003	2	60	10	30	0	20	0
Presentation skill	ODLAEC 003	2	60	10	30	0	20	0
Vedic Mathematics	ODL VAC 003	2	60	10	30	0	20	0
Total		22	660	92	292	80	196	0

Counselling Sessions Study Structure in Hours

Course Name	Course Code	Credits	Total Study Hours	Face to Face Counselling	Self-Study	Practical Work	Assignments	Project
Semester IV								
Web Technology	ODL BCA DSC 10 T	3	90	12	48	0	30	0
Web Technology Lab	ODL BCA DSC 10 P	2	60					
Data ware housing and data mining	ODL BCA DSC 11 T	3	90	12	48	0	30	0
Data ware housing and data mining Lab	ODL BCA DSC 11 P	2	60	6	4	40	10	0
Data Communication and Computer Network	ODL BCA DSC 12	2	60	10	30	0	20	0
Elective IV		4	120	16	68	0	36	0
Prompt Engineering	ODL BCA SEC 004	2	60	10	30	0	20	0
Business Communication skill	ODL AEC 004	2	60	10	30	0	20	0
Society culture and human behavior	ODL VAC 04	2	60	10	30	0	20	0
				10	30	0	20	0
	Total	22	660	96	318	40	206	0

Counselling Sessions Study Structure in Hours

Course Name	Course Code	Credits	Total Study Hours	Face to Face Counselling	Self-Study	Practical Work	Assignments	Project
Semester V								
Advanced Java Programming	ODL BCA DSC 13 T	3	90	12	48	0	30	0
Advanced Java Programming Lab	ODL BCA DSC 13 P	2	60	6	4	40	10	0
Compiler Designing	ODL BCA DSC 14	4	120	16	68	0	36	0
Cloud Computing Foundations	ODL BCA DSC 15	3	90	12	48	0	30	0
Elective V		3	90	12	48	0	30	0
Elective V Lab		2	60	10	30	0	20	0
Elective VI		3	90	12	48	0	30	0
Internet of Things	ODL BCA SEC 005	2	60	10	30	0	20	0
Total		22	660	90	324	40	206	0

Counselling Sessions Study Structure in Hours								
Course Name	Course Code	Credits	Total Study Hours	Face to Face Counselling	Self-Study	Practical Work	Assignments	Project
Semester VI								
Advanced Machine Learning	ODL BCA DSC 16 T	3	90	12	48	0	30	0
Advanced Machine Learning Lab	ODL BCA DSC 16 P	2	60	6	4	40	10	0
User Interface and User Experience Design	ODL BCA DSC 17 T	3	90	12	48	0	30	0
User Interface and User Experience Design Lab	ODL BCA DSC 17 P	2	60	6	4	40	10	0
Green Computing	ODL BCA DSC 18	2	60	10	30	0	20	0
Elective VII		2	60	10	30	0	20	0
Elective VII Lab		2	60	6	4	40	10	0
Corporate Communication Skills	ODL AEC 005	2	60	10	30	0	20	0
Internship/Project	ODL BCA INT 01	4	120	20	100	0	0	0
	Total	22	660	92	298	120	150	0

Instruction to Students for Formatting the Assignments

1. This booklet contains the assignments for the entire (All Semester) programme. Each course has one assignment. All assignments should be completed and submitted at study center before the due date.
2. Please note that you will not be allowed to appear for the Term End Examinations for the course, until the assignments are submitted before the due date.
3. The assignments constitute the continuous component of the evaluation process and have 30% weightage in the final grading. You need to score minimum marks as per Examinations Scheme of Particular Programme in assignment in each course in order

to clear the continuous evaluation component.

4. The assignment should be hand written on a A-4 size paper with proper cover which contains all the required information as given on the next page. You can use the photocopy of the cover for each assignment.
5. Leave at least 4cm margin on the left, top and bottom of your answer sheets for the evaluator's comments.
6. Your answers should be brief, precise and in your own words. Please do not copy the answers from the study material.
4. Please do not copy the assignment from other student.
5. While solving the questions, clearly indicate the question number along with the part being solved. Recheck your work before submitting it.
6. You may retain a copy of your assignment response to avoid any unforeseen situation.
7. You can resolve the difficulties you may face while studying the course material by sending an e-mail to Programme coordinator/study centre coordinator. However, the coordinator will not provide solutions to the assignment questions, since they constitute an evaluation component.

Note: Assignments of the course are available for download at the university website. You can download the assignments as per your course, follow the instructions given and submit it before due dates at the university/study centre.

GUIDELINE FOR PREPARATION AND PRESENTATION OF PROJECT/DISSERTATION REPORT



MATS CENTER FOR OPEN AND DISTANCE
EDUCATION

MATS UNIVERSITY GULLU, AARANG,
DISTT. - RAIPUR
CHHATTISGARH

PROJECT REPORT FORMAT

The Project Report consists of three main parts (i) The Preliminaries (ii) The Text (iii) Annexure. It is to be arranged in the following sequence.

THE PRELIMINARIES:

- ❖ Title Page (Outer Cover) as per the format given in Annexure III, (should be printed in White Colour on a Navy Blue background).
- ❖ Title Page (Inner Cover) as per the format given in Annexure IV
- ❖ Declaration by the candidate (Annexure – V)
- ❖ Certificate of Supervisor/s (Annexure – VI)
- ❖ Acknowledgements (Annexure – VII)
- ❖ Table of Contents (Annexure – VIII)
- ❖ Abstract/Preface
- ❖ List of Tables (If applicable)
- ❖ List of Figures (If applicable)
- ❖ List of abbreviations (Optional)
- ❖ Chapter –I to continue according to the table of contents.

THE TEXT OF THE PROJECT REPORT

The text the Project Report is usually divided in to chapters with subheadings, within the chapters to indicate the orderly progression of topics and their relation to each other

Chapter-I Introduction: - The Project Report should normally begin with a general introduction presenting an overview of the purpose and significance of the study. The introduction should show why the topic selected is worth investigating. This will normally be done with reference to existing research, identifying areas that have not been explored, need to be explored. The final section of the introduction should provide a brief overview of each of the main chapters that the reader will encounter.

Chapter-II Review of Related Literature: - The purpose of the literature review is to summarize, evaluate and compare the main developments and current database in the field which are specifically relevant to the subject of research embodied in the Project Report.

Chapter-III Research Methodology: - The supervisor and the student may decide how this part of the Project Report should be structured. Although this section varies depending up on method and analysis technique chosen, the chapter describes and justifies the methods chosen for the study and why this method was the most appropriate.

Chapter-IV Observations & Analysis: - Observations, Analysis and Interpretation should be done as per data collected from sample.

Chapter-V Results Conclusions and Suggestions: The results are actual statement of observations, including statistics, tables and graphs. Do not present the same data as graph as well as table. Use one of the appropriate styles of presentation. The purpose of this chapter is not just to reiterate the findings but discuss the observation in relation to the theoretical body of knowledge on the topic.

Bibliography Citation in Text: Citation in the text usually consists of the name of the author(s) and the year of the publication. The page no is added when utilizing a direct quotation. It should be arranged Alphabetically.

Example (i): Thomas.V (2007) identified....

Example (ii): Gould and Brown (1991, p. 14) used
the Example (iii) : Rhoades et. al (2008) define the

.....

References: All publications listed in the Project Report should be presented in a list of references, following the sample.

Citation from Project Report :

- Kundur., D. (1999), Multiresolution Digital Watermarking: Algorithms and Implications for Multimedia Signals. Ph.D Project Report , University of Toronto.

Citation from Journal:

- Clifford, G. D. and Tarassenko.,s L. (2001), One-pass Training of Optimal Architecture Auto-associative Neural Network for Detecting Ectopic Beats. Electron Letters. 37(18): 1126–1127.
- Rhoades, B.E. (1997), A Comparison of various definitions of Contractive mappings, Trans.Amer.Math.Soc., Vol. 5, no.3, 257-290.

Citation from Books:

- Thompson, D. ed., (1995), The Concise Oxford Dictionary of Current English. Oxford, UK: Oxford University Press, 9th ed. ISBN No.: 0987654.
- Lindsay, D. (1999), A Guide to Scientific Writing, Melbourne, Chapter 2, Australia: Addison Wesley Longman Australia, 2nd ed. ISBN No.: 12345678.

Citation from Website:

Anonymous, unZign, "Tool for Evaluating a Variety of Watermarks",

<http://altern.org/watermark/>, (Browsing date: 23rd September 1997)

Publication of the University of Geneva (on digital watermarking): <http://cuiwww.unige.ch/~vision/Publications/watermarking_publications.html> (Browsing Date: 4th January 2006)

Citation from patent:

Gustafsson J. K. (1976), "Analog-digital converter for a resistance bridge", Patent U. S. 3960010, June 1,.

References must be given alphabetically in References section and in text as Clifford. G. D. and Tarassenko. L. (2001) suggested that.....

Appendices:

- Questionnaire /Formula /Diagnosis/Any other Supporting Documents

GUIDELINES FOR WRITING:-

1. Font size For English

Title Page	18-24
Headings / subheadings	12-16
Text	12
Footnotes	8-10

Font size For Hindi

18-24
16-20
14
10-12

Footnotes be given on the same page where reference is quoted

2. Type style

Times New Roman for English

Kruti dev 10 for Hindi

3. Margins.

At least 1¼ -1½ inches (3.17-3.81cm) on the left-hand side, 3/4 - 1 inch (2 -2.54cm) at the top and bottom of the page, and about ½ - 0.75 inches (1.27 - 1.90cm) at the outer edge. The best position for the page number is at top-center or top right ½ inch (1.27 cm) below the edge. Pages containing figures and illustration should be suitable paginated.

4. The *Project Report* shall be computer typed (**English-** British, Font Style -Times Roman, Size-12 point, **Hindi-** Font Style -Krutidev-10,Size-14) and printed on A4 size paper.
5. The *Project Report* shall be typed on one side only with double space with appropriate margin.
6. Use only standard abbreviations. Avoid abbreviations in the title. The full term for which an abbreviation stands should precede its first use in the text except in case of measurement units. The measurement units if any shall be followed consistently.
7. Maintain uniformity in writing the *Project Report*.
8. All copies of the *Project Report* are to be bound in colored hard cover (according to color code) of the *Project Report*.
9. The final submission of the *Project Report* shall be in 03 hard bound copies and 01 soft copy (MS Word) in a CD along with all the corrections and suggestions as recommended before.

~~~~~



**ANNEXURE-III (Outer cover)**

**THE TITLE OF THE PROJECT REPORT     IN THE  
OUTER COVER  
SHALL LOOK EXACTLY LIKE THIS TITLE**

*(Font: Times New Roman, Size:16, Bold, Line Spacing: 1 ½, Centered)*

*{Here put a gap of 4 lines}*

**Project Report submitted to**

*(Font: Times New Roman, Size: 12, Bold, centered)*

*{Here put a gap of one line}*



*<University's logo>*

**MATS CENTER FOR OPEN AND DISTANCE EDUCATION  
MATS University  
Raipur (C.G.)**

*(Font: Times New Roman, Size: 14, Bold, centered)*

*{Here put a gap of one line}*

**For the award of the degree of**

*(Font: Times New Roman, Size: 12, Bold, centered)*

*{Here put a gap of one line}*

**PROGRAMME NAME**

*(Font: Times New Roman, Size: 14, Bold, centered)*

*{Here put a gap of two lines}*

**by**

*(Font: Times New Roman, Size: 12, Bold, centered)*

*{Here put a gap of two lines}*

**<NAME OF THE STUDENT>**

*(Font: Times New Roman, Size: 14, Bold, centered)*

**Registration No.: <>**

*(Font: Times New Roman, Size: 12, Bold, centered)*

**<Year>**

*(Font: Times New Roman, Size: 12, Bold, centered)*

**© <Year><Name of the student>.All rights reserved.**

*(Font: Times New Roman, Size: 10, Bold, Centered)*

**ANNEXURE-IV (Inner cover)**

**THE TITLE OF THE PROJECT REPORT IN THE INNER  
COVER SHALL  
LOOK EXACTLY LIKE THIS TITLE**

*(Font: Times New Roman, Size:16, Bold, Line Spacing: 1 ½, Centered )*

*{Here put a gap of 4 lines}*

**Project Report submitted to**

*(Font: Times New Roman, Size: 12, Bold, centered)*

*{Here put a gap of one line}*

**MATS CENTER FOR OPEN AND DISTANCE EDUCATION**

**MATS University**

**Raipur (C.G.)**

*(Font: Times New Roman, Size: 14, Bold, centered)*

*{Here put a gap of one line}*

**For the award of the**

**degree of**

*(Font: Times New Roman, Size: 12, Bold, centered)*

*{Here put a gap of one line}*

**PROGRAMME NAME**

*(Font: Times New Roman, Size: 14, Bold, centered)*

*{Here put a gap of two lines}*

**by**

*(Font: Times New Roman, Size: 12, Bold, centered)*

*{Here put a gap of two lines}*

**<NAME OF THE STUDENT>**

*(Font: Times New Roman, Size: 14, Bold, centered)*

**Under the Guidance of**

*(Font: Times New Roman, Size: 12, Bold, centered)*

**<NAME OF THE SUPERVISOR/S>**

*(Font: Times New Roman, Size: 14, Bold, centered)*

**<Year>**

*(Font: Times New Roman, Size: 12, Bold, centered)*

**©<Year><Name of the student>.All rights reserved.**

*(Font: Times New Roman, Size: 10, Bold, Centered)*

**ANNEXURE-V**

**DECLARATION**

I the undersigned solemnly declare that the Project Report entitled “**title of the work**” is based on my own work carried out during the course of my study under the supervision of < name of supervisor >.

I assert that the statements made and conclusions drawn are an outcome of my research work.

I further certify that

- i. The work contained in the Project Report is original and has been done by me under the general supervision of my supervisor (s).
- ii. The work has not been submitted to any other Institute for any other Degree/Diploma/Certificate in this University or any other University of India or abroad.
- iii. I have followed the guideline provided by the University in writing the Project Report.
- iv. I have conformed to the norms and guidelines given in the concerned Ordinance of the University.
- v. Whenever I have used materials (data, theoretical analysis, and text) from other sources, I have given due credit to them by citing them in the text of the Project Report and giving their details in the references.
- vi. Whenever I have quoted written materials from other sources, I have put them under quotation marks and given due credit to the sources by citing them and giving required details in the references.

(Name & Signature of the  
Student) Registration No.

**ANNEXURE-VI**

**CERTIFICATE**

This is to certify that the work incorporated in the Project Report entitled “ title of the Project Report ” is a record of own work carried out by <**Name of Student** > under my supervision for the award of degree of **Programme Name** of MATS Center for Open and Distance Education, MATS University, Raipur (C.G.)-India.

To the best of my knowledge and belief the Project Report:

- i. Embodies the work of the candidate himself/herself,
- ii. Has duly been completed.
- iii. Is up to the desired standard both in respect of contents and language for being referred to the examiners.

Supervisor-

(Name and signature of the

Supervisor

With designation and Name of Organization)

(Signature of Academic

Coordinator) (Seal of MCODE)

**ANNEXURE-VII**

**ACKNOWLEDGEMENT**

Acknowledgements should be brief and should not exceed one page. Acknowledgements should be duly signed by the candidate. Gratitude may be expressed to only those who really contributed to the work directly or indirectly. Name of student should appear at the bottom of the page.

**SAMPLE ACKNOWLEDGEMENT**

It is a matter of immense pleasure to express the overwhelming sense of gratitude, devotion, incontestable regards to my esteemed & learned guides <.....> who have striven to perfect my project report.

.....  
.....  
.....

Finally, I express my indebtedness to all who have directly or indirectly contributed to the successful completion of my project work.

**< Name of Student >**

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