



RKDF UNIVERSITY, BHOPAL
Bachelor of Computer Applications (BCA)
SCHEME
First Semester
Academic Session : 2022-23

S.No	Subject Code	Subject Name	Marks Distribution				Credits	
			CAA (Continuous Assessment & Assignment)	Theory Marks	Practical Marks			Total Marks
					Internal	External		
1	BCA-101 Major (Core)	Programming methodologies with C++	40	60	40	60	200	06 = 4T+2P
2	BCA-102 (Minor)	Computer Fundamental Architecture	40	60	-	-	100	06
3	BCA GEC-103 (Generic Elective)	1. Money And Banking 2. Advertising Sales Promotion and Management 3. Communicative English 4. Organisational Behavior 5. Child Right and Woman Empowerment 6. Computational Mathematics 7. Numerical Method 8. Herbal Cosmetics 9. Computer Fundamentals	40	60	-	-	100	04
4	BCA-104 (AEC)	Environmental Education	40	60	-	-	100	04
Grand Total			160	240	-	-	500	20

Note: The Student may opt for any one of the Generic elective Course.

CAA : Continuous Assessment & Assignment.



RKDF UNIVERSITY, BHOPAL

B.C.A. -Semester . I

Name of the Program: Bachelor of Computer Applications		Program Code: 03
Name of the Course: Programming Methodologies with C++		
Course Code: BCA-101/MIT Major (Core)	Total Duration: 60 hours	Max. Marks:100
	Total Credits: 04	Theory Marks (Internal:40+External:60)

Course Outcomes

CO1: Develop algorithms and flow charts to solve a problem using top down approach.

CO2: Create efficient and well-structured object-oriented programs using C++.

CO3: Integrate concepts of constructors, destructors, pointers, streams and exception handling using C++ programming.

C04: Develop programs to implement concepts of Inheritance for Problem Solving

CO5: Develop programs to implement concept of polymorphism and file handling methods in programming using C++

BCA I-sem Programming Methodologies with C++)

Unit	Topics	Duration (In Hours)
I	<p>Introduction of Programming . Program Concept, Characteristics of Programming, Stages in Program Development, Algorithms, Notations, Design, Flowcharts, Types of Programming Methodologies, Principles of OOP, procedure-oriented programming vs. object-oriented programming, basic concepts, advantages, application of OOPs, object-oriented languages.</p> <p>Basics of C++: A Brief History of C++, Application of C++, Compiling & Linking, Tokens, Keywords, Identifiers & Constants, Basic Data Types, User-Defined Data Types, Symbolic Constant, Type Compatibility, Reference Variables, Operator in C++, Scope Resolution Operator, Member Dereferencing Operators, Input-Output statements, Conditional Statements, Loops, Memory Management Operators, Manipulators, Type Cast Operator, Type Conversion.</p>	12

Unit	Topics	Duration (In Hours)
II	<p>Functions in C++: The Main Function, Function Prototyping, Call by Reference Call by Address, Call by Value, Return by Reference, Inline Function, Default Arguments, Recursion, Constant Arguments, Function Overloading, Function with Array, String Functions.</p> <p>Classes and Objects: A Sample C++ Program with class, Defining Member Functions, Making an Outside Function Inline, Nesting of Member Functions, Private Member Functions, Arrays within a Class, Memory Allocation for Objects, Static Data Members, Static Member Functions, Array of Objects, Object as Function Arguments, Friend Functions, Returning Objects, Constant member functions, Local Classes.</p>	12

Unit	Topics	Duration (In Hours)
III	<p>Constructor and Destructor: Constructor Parameterized Constructor, Multiple Constructors in a Class, Constructors with Default Arguments, Dynamic Initialization of Objects, Copy Constructor, Dynamic Constructor, Destructor.</p> <p>Pointers, Streams and Exception Handling: Pointers, Pointers with Arrays, Pointer to Members, C++ Streams, C++ Stream Classes, Unformatted I/O Operation, Formatted I/O Operation, Managing Output with Manipulators, Exception Handling.</p>	12

BCA I-sem 'Programming Methodologies with C++

Unit	Topics	Duration (In Hours)
IV	Inheritance: Defining Derived Classes, Single Inheritance, Making a Private Member Inheritable, Multilevel Inheritance, Hierarchical Inheritance, Multiple Inheritance, Hybrid Inheritance, Virtual Base Classes, Abstract Classes, Constructor in Derived Classes, Nesting of Classes.	12

Unit	Topics	Duration (In Hours)
V	Polymorphism and File Handling: Polymorphism, Operator Overloading, Virtual functions. Pointers to objects, this pointer, Pointers to derived class, Pure Virtual functions. Working with files: open, close, basic read-write operations on files.	12

Recommended Text Books:

1. Yashawant Kanetkar, "Let us C++", 2nd Edition, BPB Publications, 2003
2. E. Balaguruswamy, "Object Oriented Programming with C++", 8th Edition, McGraw Hill Publications, 2020

Recommended Reference Books:

1. Herbert Schildt, "C++: The Complete Reference", 4th Edition, McGraw Hill Publication, 2017
2. Stanley B., Lippman, Josee Lajoie, Barbara E. Moo, "C++ Primer", 5th Edition, Pearson Education, 2012
3. Bjarne Stroustrup, "C++ Programming Language", 4th Edition, Addison-Wesley, 2013

Recommended Web Reference:

1. NPTEL Course on Programming in C++
(<https://nptel.ac.in/courses/106/105/1061051510>)
2. <https://www.youtube.com/watch?v=BC1S40yzssA>
3. <https://www.youtube.com/watch?v=vLnPwxZdW4Y&vl=en>



RKDF UNIVERSITY, BHOPAL

B.C.A. - Semester I

Name of the Program: Bachelor of Computer Applications	Program Code: 03
Name of the Course: Programming Methodologies with C++ (Practical)	
Course Code: BCA-101/M1P	
Duration : 60 Hours	Credit : 02

List of Practical

1. Write a program to swap the contents of two variables.
2. **Write a program for finding the roots of a Quadratic Equation.**
3. **Write a program to find area of** a circle, rectangle, square using switch case.
4. Write a program to print table of any number.
5. Write **a program** to print **Fibonacci** series.
6. Write a program to find factorial of a given number using recursion.
7. **Write a program to convert decimal (integer) number into equivalent binary number.**
8. Write a program to check given string is palindrome or not.
9. Write a program to print digits of entered number in reverse order.
10. Write a program to print sum of two **matrices**.
11. Write a program to print multiplication of two matrices.
12. Write a program to generate even/odd series from 1 to 100.
13. Write a program whether a given number is prime or not.
14. Write a program for call by value and call by reference.

15. Write a program to create a pyramid structure

```
1  
12  
1 2 3  
1 2 3 4
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16. Write a program to check entered number is Armstrong or not.

17. Write a program to input N numbers and find their average.

18. Write a program to find the area and volume of a rectangular box using constructor.

19. Write a program to design a class time with hours, minutes and seconds as data members. Use a data function to perform the addition of two-time objects in hours, minutes and seconds.

20. Write a program to implement single inheritance.



RKDF UNIVERSITY, BHOPAL

B.C.A. - Semester - I

Name of the Program: Bachelor of Computer Applications		Program Code: 03
Name of the Course: Computer Fundamentals and Architecture		
Course Code: BCA-102/M2T (Minor)	Total Duration: 90 hours	Max.
	Total Credits: 06	Marks: 100(Intemal:40+E

Course Outcomes:

- C01:** **Explain** the concepts of computer components, operating system and virus
- CO2:** **Outline** different contemporary computer technologies & **understand** concept of E-waste management
- CO3:** Explain various communication networks and their utility
- CO4:** Perform Number Conversions
- CO5:** Identify the logic gates and their functionality and **design** basic electronic combinational Circuits

BCA1-sem [Computer Fundamentals and Architecture]

Unit	Topics	Duration (InHours)
I	<p>Fundamentals of Computers: Definition, Characteristics, Evolution & Generations of Computers, Classification of Computers, Basic Organization of a Digital Computer, Concepts of Hardware and Software.</p> <p>Hardware- Memory Unit: Primary and Secondary Memory, INPUT DEVICES- Key Board, Scanner, Mouse, Light Pen, Bar Code Reader, OMR, OCR, MICR., Track ball, Joystick, Touch Screen etc., OUTPUT DEVICES: Monitors and its types, Printers and its types, Plotters and its types, Projectors etc., STORAGE DEVICES: Magnetic tapes, Floppy Disks, Hard Disks, Compact Disc, Flash Drives etc.</p> <p>Software - System Software and Utility Software; Programming Language and its classification - Machine Level, Assembly Level & High-Level Languages. Translator Programs- assembler, Interpreter and Compiler. Operating Systems: Introduction. Function and Types of OS Introduction to DOS. Unix. Linux. Windows and Mac OS. The concept of Open Source software and its advantages and limitations. Virus and malwares- working principles, Types of viruses, Worms and Trojan Horses, virus detection and prevention, viruses on network, Anti-virus software, some examples related to types of virus attacks.</p>	18

Unit	Topics	Duration (InHours)
II	<p>Introduction Contemporary Computer Technologies: Multimedia, Data Warehousing & Mining, E-commerce, Neural Networks, Artificial Intelligence, Machine Learning, Cloud Computing, Wireless Sensor Network, Big Data, Data Analytics, Block chain, Social Media & Digital Marketing. E-Governance. E-Banking, E-learning, GIS, VR and AR, Robotic, Crypt Currencies, IoT, and Immersive Technology</p> <p>E-Waste E-Waste, Indian and global scenario of e-Waste, Growth of Electrical and Electronics industry in India, Composition of e-waste, Possible hazardous substances present in e-Waste, Environmental and Health implications, E-waste management rules</p>	18

Unit	Topics	Duration (InHours)
III	<p>Introduction Networks: Basic of Computer networks & their uses, Topology, Networking Devices, Firewalls, Network Operating System, Classification of Networks.</p> <p>Concept of Internet: History Applications of Internet; ISP; World Wide Web; Web Browsers, Search Engines; URL; Domain name; IP Address, Basics of electronic mail; Social Networking; Netiquettes. Websites and Web Portals.</p>	18

Unit	Topics	Duration (InHours)
IV	Fundamentals of Digital Electronics: Number System: Decimal, Binary, Octal, Hexadecimal with conversion, Complements, Binary Arithmetic, Fixed-Point Representation, Floating-Point Representation, Codes: BCD Code, Excess-3 Code, Gray Code, EBCDIC, ASCII Code, Error Detection Code.	18

Unit	Topics	Duration (InHours)
V	Logic Gates: AND, OR, NOT, NAND, NOR, XOR, XNOR, Boolean Algebra, Karnaugh Map Simplification, Combinational Circuits: Adder, Subtractor, Multiplexer, DE multiplexer Decoders, Encoders, Sequential Circuits: Flip - Flops, Registers, Counters.	18

Recommended Text Books:

1. PK Sinha, "Computer Fundamentals", PHI
2. M. Morris Mano. "Computer System Architecture", PHI.
3. J. B. Ram. "Computer Fundamental". TMIH

Recommended Reference Books:

1. William Stallings, "Computer Organization & Architecture", Pearson Education Asia.
2. V. Carl Hamacher, "Computer Organization", TMI-I
3. Tannenbaum, "Structured Computer Organization", PHI.
4. Er. Rajiv Chopra, "Computer Architecture", Revised 3rd Edition, S. Chand & Company Pvt. Ltd, 2013
5. Johri R., "E-waste: implications, regulations, and management in India and current global best practices", TERI Press, New Delhi

Recommended Web Reference:

1. <https://onlinccourcs.swayam2.ac.in/cec19cs06/preview>



RKDF UNIVERSITY, BHOPAL
First Semester

Course	Category	Subject	Subject Code
Bachelor of Computer Application	GEC	1.MONEY AND BANKING	BCA GEC-103
TotalCredit:3		Max.Marks:100 (Internal:40+External:60)	

Course Outcomes:

1. To develop understanding about money and its role in the economy.
2. To create understanding about underlying theories regarding money and its relevance to the economy.
3. To comprehend and critically appraise current economic fluctuation and monetary policy.
4. To build up insight into institutional setup of banking industry and their role in the Indian economy.
5. To expand competency and skills for understanding functioning of money, money market operations and the policies framework and its impact on the economy.

Units	Topic	Duration (In Hours)	Marks
I	<p>Money: Meaning Functions, and Classification: Concept, definition, functions and importance of money. Classification of money, role of money in capitalist, socialist and mixed economies. Essential qualities of good money, Money Aggregates & Paper Money meaning, forms principles. Methods of note issue in India, Gresham's Law,</p>	9	20
II	<p>Value of Money and Economic Fluctuations: Theories of value of money - Quantity theory of money Fisher's and Cambridge equations and Income Theory. Economic Fluctuations - Inflation, Deflation, Stagflation. Demonetization - Concept and Impact.</p>	12	20
III	<p>Money Market and Monetary Policy Functions and Importance of Money Market. Indian money market. Monetary Policy objectives, indicators and Instruments. Monetary Policy in Open Economy. Current Monetary Policy of India</p>	8	20
IV	<p>Banking Institutions Concept Definition Functions and Importance of Banks. Types of Banks - Commercial Bank, Development Bank, Cooperative Bank, Regional Rural Bank, Micro Finance Institutions, Private Bank, Indigenous Banks. Credit Creation and role of Banking in the Economy.</p>	8	20
V	<p>Central Bank and Policy Reforms in Banking Objectives of Central Bank and its role in the economy. Reserve Bank of India (RBI) - organization, structure and its functions. Credit</p>	8	20

	creationandcontrolbyRBI.Nationalization ofBanksanditsobjectives. Bankingsectorreforms.Recenttrends in banking system in India.		
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***Note: Topic/ Topics in Bold Italic represent enhancements made by the college.**

Recommended Books:-

Name of the Book	Author/Authors Name	Publisher	Edition
Money&Banking	Dr.V.CSinha Dr.PushpaSinha	SBPDPublications	2020
MoneyandBanking	<i>RobertE.Wright</i>	SaylorFoundation,NewYork	2012
BankingTheoryLaw& Practice.	S.Gurusamy	VijayNicole Imprints	2015
<i>Money,Banking, Financialmarkets &institutions</i>	BrandlMichaelW	Cengage.NewDelhi	2019
Money&Banking	<i>G.CSinghai,DrS.KSingh)</i>	SahityaBhawanPublications	2017
Money&Banking	J.P.Mishra(Author)	SahityaBhawanPublications	2020



RKDF UNIVERSITY, BHOPAL
First Semester

Course	Category	Subject	Subject Code
Bachelor of Computer Application	GEC	2.Advertising Sales Promotion and Management	BCA GEC-103
TotalCredit:6		Max.Marks:100 (Internal:40+External:60)	

CourseOutcomes:

1. Students will be able to understand:-
 - a. The meaning and Importance of Sales Promotion.
 - b. Types, tools and Programme of sales Promotion
 - c. Sales Promotion- result to increase sales of organization

Units	Topic	Duration (In Hours)	Marks
I	Historical Background of Sales Promotion in India. Nature and importance of sales promotion - Definition, Functions and limitations, Objectives, Sales Promotion Budget, Role in marketing.	15	20
II	Forms of sales promotion - Consumer Oriented, Trade Oriented, Sales Force Oriented.	20	20
III	Major tools of sales promotion - Samples, Display and Demonstration, Fashion Shows, Sales contest, lotteries, gift offers, rebates, rewards.	20	20
IV	Sales promotion Requirement identification, Designing of sales promotion campaign, Involvement of salesmen and dealers, Outsourcing sales promotion, National and International promotion strategies, Coordination within the various promotion techniques.	20	20
V	Developing sales promotional programme, pre- testing implementing, evaluation of results and making necessary modifications	15	20

Recommended Books:-

1. Suggestive digital platforms web links

01-Rosan-Management Sales Force-McGraw Hill

02-Anne Coughlan, Erin Anderson - Marketing Channels- Stem & Adel El-Ansary,
Pearson,

03-Sachin Bert- Professional approach to modern salesmanship - McGraw Hill

04-SHH Kazmi, Satish K Batra - Advertising And Sales Promotion-McGraw Hill

05-Sanjay-Advertising And Sales Promotion-SBPD Agra

06-Taylor, John (1978).How to start and succeed in a business of your own.p. 290.

07

08- Belch & Belch-Advertising & Promotion-Tata McGraw Hill

09-Kotler, Philip and Armstrong, Gary, principles of Marketing, Prentice Hall. 2.

Buskirk, Selling: Principles and Practices, McGraw-Hill. 3. Futrell, Charles, Sales
Management,South-Western College.

10- Walker, Stanton, Pandit, Ajay, Marketing, McGraw-Hill

S.A.Chunawalla - Advertising, Sales and Promotion Management, Himalaya.

2 Suggested web links:

<https://raventools.com/blog/8-link-marketing-techniques-for-smbs/>

Suggested equivalent online courses:

[https://www.classcentral.com/course/sales-marketing-alignment-](https://www.classcentral.com/course/sales-marketing-alignment-9729)

[9729 https://www.coursera.org/specializations/the-art-of-sales-mastering-the-selling-process](https://www.coursera.org/specializations/the-art-of-sales-mastering-the-selling-process)



RKDF UNIVERSITY, BHOPAL
First Semester

Course	Category	Subject	Subject Code
Bachelor of Computer Application	GEC	3.Communicative English	BCA GEC-103
TotalCredit:6		Max.Marks:100 (Internal:40+External:60)	

CourseOutcomes:

The study of this course will enable the students to acquire the knowledge of

- Phonology and Morphology
- Syntax and Structure, and
- Vocabulary and Discourse.

The students will be able to converse in real-life situations with effective language skills. The course

will also help them.

- Acquire literary sense,
- Use idiomatic and lexical language, and
- Communicate effectively across the globe

Units	Topic	Duration (In Hours)	Marks
I	<p>Communication</p> <p>1.1 What is communication Its meaning, types & its purpose in the age of Globalization</p> <p>1.2 Communicative needs and problems</p> <p>1.3 Expansion of an idea</p> <p>1.4 Rules of use of language, use of appropriate words</p> <p>Keywords/Tags: competence. affective</p> <p>Communication</p> <p>Linguistic and communicative and cognitive ESL EFL Acquisition of 11. 12 and Collocational language</p>	10	20
II	<p>Practicing Listening skill. Reading and Understanding Skills</p> <p>2.1 Listening to Radio and TV news. Discussion and comprehension of rules of grammar. Parts of Speech, Pronunciation and intonation melodic parts of Utterance variation of pitch</p> <p>2.2 Reading newspapers, analysis and interpretation</p> <p>2.3 IPA and phonetic symbols</p> <p>2.4 Precis Writing and paraphrasing</p> <p>2.5 Vocabulary enrichment</p> <p>Keywords/Tags: LRWS Receptive skills. Attentive listening Word stress. Intonation. Syllable. Received pronunciation (RP). Summarizing Pragmatic competence.</p>	10	20
III	<p>Practicing Writing and Speaking Skills</p> <p>3.1 Formal and informal writing of letter and invitation, meeting minutes official orders writing. Listening to talks and presentation, note-making appointments creative Tips.</p> <p>3.2 Communicative approach. lexical approach, task based learning.</p>	15	20

	<p>3.3 Report writing. Story writing, Daily routine in English</p> <p>3.4 Situational conversation between two friends on different topics</p> <p>Keywords/Tags: Productive skills Code mixing, Situational conversation.</p> <p>Structural English. Frequent use of proverbs, phrases and idioms</p>		
IV	<p>Application of Communicative English</p> <p>4.1 Translation (from Hindi to English and vice versa)</p> <p>4.2 Group and Peer Discussions, Role play</p> <p>4.3 Contrastive analysis between L1 and L2 At structural, phonological and lexical levels with examples</p> <p>Keywords/Tags: Literary translation, Translation L¹ interference Bilingualism Types of Role-play Communicational English</p>	10	20

Recommended Books:-

Text Books, Reference Books, Other resources

A Communicative Grammar of English Leech Geoffrey, and Jan Svartvik Routledge, 2003 Third edition

"CLT for ESL Teachers & Learners" Gautam, GS, Classical Publishing Co. New Delhi, India 2012 1st ed.

"Communicative English for Globalization" Gautam, GS Classical Publishing Co. New Delhi, India 2013 1st ed.

"Communicative English Language Skills" Sumague, Julieta Arjona Society Publishing, 2020

"Communicative Methodology in Language Teaching" Brumfit. C. Cambridge University Press 1984

"Language Teaching A Scientific Approach" Lado Robert McGraw-Hill, New York. 1964

"Motivation - The Teacher's Responsibility" Allwright. Dick ELT Journal 31/4/1977

"Problems and Principles in Language Teaching" Brumfit. C. Pergamon Institute of English 1

"The Learner-Centred Curriculum" Nunan, D. Cambridge University Press 1988. \

Suggested Digital Platform weblinks:

(C) Copyright [skillsyouneed.com](https://www.skillsyouneed.com) 2011-2021 "What Is Communication? Verbal, Non-Verbal & Written Skills You Need Skills You Need. 2019 www.skillsyouneed.com/ips/what-is-communication.html

Ekeeda "Written Communication Introduction to Communication Skills Communication Skills YouTube, uploaded by Ekeeda. 6 Nov 2018. www.youtube.com/watch?v=BHe003UaQy

Msengeti, David. "Communication Notes SlideShare.

2016. www.slideshare.net/mwakidimi/communication-notes-69103614.



RKDF UNIVERSITY, BHOPAL
First Semester

Course	Category	Subject	Subject Code
Bachelor of Computer Application	GEC	4.ORGANISATIONAL BEHAVIOR	BCA GEC-103
TotalCredit:4		Max.Marks:100 (Internal:40+External:60)	

CourseOutcomes:

The course will enable to the students to develop and understanding of the principles of human behavior in organisations with relevance to the Indian Business context.

Units	Topic	Duration (In Hours)	Marks
I	<p>INTRODUCTION: Concept of Organizational Behavior (OB); Management roles, skills and activities; Disciplines that contribute to OB; Opportunities for OB(Globalization, Indian Workforce diversity, Customer Services, innovation and change, networked Organizations, Work Life Balance, People Skills, Positive Work environment, Ethics)</p>	12	20
II	<p>INDIVIDUAL BEHAVIOUR: 1. Learning, attitude and Job Satisfaction: Concept of Learning, Conditioning, Shaping and reinforcement. Concept of attitude, components, Behavior and attitude, Job satisfaction: Causation; impact of satisfied employees on workplace. 2. Motivation: Concept; Theories(Hierarchy of needs, X and Y, Two factor, McClelland, Goal setting , Self-efficacy, Equity theory); Job Charaterisitics model; Redesigning job and work arrangements; Employee involvement; Flexible benefits, Intrinsic rewards 3. Personality and Values: Concept of Personality; Myres-Briggs Type Indicator(MBTI); Big Five Model. Relevance of Values; Indian Values; Linking Personality and Valuess to the Workplace(person-job fit, person-organization fit) 4. Perception, Decision Making and Emotions: Perception and Judgements; Factors; Linking perception to individual decision making; Decision making in Organizations, Ethics in decision making. Emotional labour; Emotional Intelligence.</p>	12	20
III	<p>GROUP BEHAVIOUR: 1. Groups and Work Teams: Concept; Five stage model of group development; Group think and shift; Indian perspective on group norms. Groups and teams; Types of teams; Creating team players from individuals; Team building and team based work(TBW). 2. Leadership: Concept; trait theories; Behavioral theories (Ohio and Michigan studies); Contingency theories (Fiedler, Hersey and Blanchard, Path- Goal);</p>	12	20

	Authentic Leadership; Mentoring, Self-leadership, Online Leadership; Inspirational Approaches (transformational, Charismatic); Comparison of Indian leadership styles with other countries. Exercises, games and role plays may be conducted to develop team and leadership skills.		
IV	ORGANISATIONAL CULTURE AND STRUCTURE: Concept of culture; Impact (functions and liability); Creating and sustaining culture; Employees and culture; Creating positive and ethical cultures. Concept of structure, Prevalent organizational designs; New design options.	12	20
V	ORGANISATIONAL CHANGE, CONFLICT AND POWER: Forces of change; Planned change; Resistance; Approaches (Lewin’s model, organizational development); Learning organization; Organisational change in Indian Businesses. Concept of Conflicts; Traditoonal View and interactionists view of conflict; Conflict process; Fuctional/Dysfunctional, Introduction to Power and politics.	12	20

Part- C Learning Resource

Text Books, Reference Books, Other Resources

Suggested Readings:

1. Luthans Fred., “Organisational Behaviour”, McGraw Hill.
2. Hellriegel, Slocum and Woodman, Organisational Behavior, South-Western, Thomson Learning, 9th edition, 2001.
3. Behavior In organisations Jerald Greenberg, 8th ed, Pearson Education.
4. Aronold, John, Robertson, Ivan t. and Cooper, Cary, 1., “Work Psychology; Unders trading human Behavior in the Workplace”, Macmillan Indian Ltd., Delhi.
5. Dwivedi, R.S., “Human relations and Organisational Behavior: a global perspective”, Macmillan Indian Ltd., Delhi.

Suggested Equivalent On line Courses:

1. <https://www.coursera.org/courses?query+economics>
2. <https://www.mooc-list.com/tags/economics>
3. <https://www.coursera.org/learn>
4. <https://ocw.mit.edu/courses>
5. <https://nptel.ac.in/courses/macroeconomics>
6. <https://nptel.ac.in/courses/economics>
7. <https://nptel.ac.in/courses/ManagerialEconomics>



RKDF UNIVERSITY, BHOPAL

First Semester

Course	Category	Subject	Subject Code
Bachelor of Computer Application	GEC	5.CHILD RIGHTS AND WOMAN EMPOWERMENT	BCA GEC-103
TotalCredit:4		Max.Marks:100 (Internal:40+External:60)	

Course Outcomes:

Studying child rights and Gender Empowerment would enable students to learn about the various dimensions of Vulnerability with regard to children.

The students will be able to-

1. Understand the issues related to child rights, gender roles and conservatism.
2. Familiarize with policies and programs related to Child Protection and Gender empowerment.
3. Contribute to social work in collaboration with non-governmental organizations.

Units	Topic	Duration (In Hours)	Marks
I	<p>1. Understanding Child Rights</p> <p>1.1 Child Rights: Child Rights Concept</p> <p>1.2 Demographic Profile of Indian Children</p> <p>1.3 Disadvantages, Deprivation and Social Exclusion with reference to children</p> <p>2. Children in need of care and protection</p> <p>2.1 Vulnerable groups: Causes and Consequences</p> <p>2.2 Street children, working children and homeless children</p> <p>2.3 Child abuse</p> <p>2.4 Child trafficking</p> <p>2.5 Children Conflict with law</p> <p>2.6 Child rights in other countries and UNCRC</p>	15	20
II	<p>1. Laws, Policies and Programs for Children in India.</p> <p>1.1 National Commission for Protection of Child Rights-NCPCR</p> <p>1.2 Child helpline, Umeed-Child Abuse</p> <p>1.3 Bachpanbachao Aandolan-Child labour, Child trafficking</p> <p>1.4 PRAYAS- Delinquent, Street Children</p> <p>1.5 Juvenile Justice Act(JJA)-2015</p> <p>1.6 Pre Natal Diagnostic Techniques(PNDT Act-2003)</p> <p>1.7 Domestic Violence Act-2005</p> <p>1.8 National Child Labour(protection and regulation) Act-1986</p> <p>1.9 POCSO-2012</p>	15	20
III	<p>1. Conceptualizing gender</p> <p>1.1 Defining terms-sex, gender, masculinity, femininity</p> <p>1.2 Socialization for gender- gender roles and stereotypes</p> <p>1.3 Patriarchy and social institutions</p> <p>1.4 Perspective on feminism</p> <p>2. Gender Empowerment</p> <p>2.1. Status of girls child and women in India</p> <p>2.2 Issues and concerns related to girls and women in India</p> <p>2.3 Media and gender</p> <p>2.4 Laws, Policies and Programs for girls and women in India.</p>	15	20

Part C- Learning Resources

Text Books, Reference Books, Other Resources

Suggested Readings:

1. Bajpai.A.2006, Child Rights in India: Law, Policy and Practice, Oxford University press.
2. Bhasin. K 2017, Understanding Gender, New Delhi: Raj Press
3. Chopra, G 2015. Child Rights in India: Challenges and Social Action, New Delhi: Springer.
4. Saukia, N 2008. Indian Women: A Socio-legal Perspective, New Delhi: Serials Publications
5. Bhasin.K 2014, Feminism and its Relevance in South Asia. New Delhi: Raj Press

Suggestive digital Platforms web Links:

1. <https://www.drishtias.com/hindi/daily-updated/daily-news-analysis/sc-question-neper-on-repatriation-of-children>
2. <https://www.savethechildren.in/child-protection/fundamentals-of-child-rights-in-india/>
3. <https://www.humanium.org/en/india/>



RKDF UNIVERSITY, BHOPAL

First Semester

Course	Category	Subject	Subject Code
Bachelor of Computer Application	GEC	6.Computational Mathematics	BCA GEC-103
TotalCredit:4		Max.Marks:100 (Internal:40+External:60)	

Course Outcomes:

CO1:Devise trigonometric solutions for measurement in real world scenarios.

CO2:Implementssimultaneous equation to solve complex problems.

CO3:Abilityto efficiently use statistical tools.

CO4:ApplyMathematical Logic and predicate calculus for solving problems.

COS: Apply the concept or set theory for finding solution to set related problems.

Unit	Topics	Duration (InHours)
I	Trigonometry: Angles & their Measurement, Trigonometric identities and ratios, Values of Trigonometric Ratios, Trigonometric Transformation, Height and Distances. Elementary Matrices: Introduction to Matrices, Types of matrices, And Operations on Matrices: Addition, Subtraction, Multiplication by Scalar quantity, Matrix Multiplication, Transpose Of matrices.	12

Unit	Topics	Duration (InHours)
II	Equations: Simultaneous linear equations, Method of solving Simultaneous equations; Elimination method, Comparison method, Substitution method. Cross Multiplication method, Quadratic equations.	12

Unit	Topics	Duration anHours)
III	Statistics: Introduction, Frequency Distribution, Measure of Central Tendency: Mean, Median, Mode, Partition values, Measures of Variation: Mean deviation and Standard Deviation	12

Unit	Topics	Duration (InHours)
IV	Mathematical Logic: Statements and notations. Connectives: Negation, Conjunction. And Disjunction. Statement formulas and truth tables. Tautologies, Tautological implications, contradiction contingency.	12

Unit	Topics	Duration (InHours)
V	Set Theory: Basic concepts of set theory, Set notation, Principle of inclusion and Exclusion, equality of sets, the power set, types of sets, operations on set, Venn diagrams.	12

Recommended Text Books:

1. S.M. Shukla, "Business Mathematics", Sahitya Bhawan Publications.
2. D.C. Agrawal, "Business Mathematics", Sree Sai Prakashan
3. D.C. Agrawal, "Discrete Structure", 5th Edition, S Chand Publishing

Recommended Reference Books:

1. Elhance & Elhance, "Fundamental of Statistics", Kitab Mahal Publication
2. Ray and Sharma, "Mathematical Statistics", 8th Edition, Ram Prasad and Sons
3. J.K. Singh, "Business Mathematics", Himalaya Publishing House, 2017
4. Sancheti and Kapoor, "Business Mathematics", 9th Edition, Sultan Chand & Sons, 2014
5. "Discrete Mathematics structures with application to computer science", Indian Edition
6. J.P. Tremblay, R. Manohar, McGraw Hill Education 2017
7. J.K. Sharma, "Discrete Mathematics", 2nd Edition, Macmillan Publication, 2005

Recommended Web Reference:

1. <https://byjus.com/maths/trigonometry/>
2. <http://www.mathsisfun.com/algebra/trigonometry.html>
3. <https://www.mbacrystalball.com/blog/2015/10/09/set-theory-tutorial/>
4. <https://plato.stanford.edu/entries/set-theory/basic-set-theory.html>



RKDF UNIVERSITY, BHOPAL

Semester - I

Course	Category	Subject	Subject Code
Bachelor of Computer Application	GEC	7.Numerical Methods	BCA GEC-103
TotalCredit:4		Max.Marks:100 (Internal:40+External:60)	

Unit	Topics	Duration (InHours)
I	Methods for Solving Algebraic and Transcendental Equations: Bisection Method, RegulaFalsi Method, Secant Method, Newton-Raphson Method, Ramanujan Method.	18
II	Interpolation: Lagrange interpolation, Finite difference operators, Interpolation formula using Differences, Gregory-Newton Forward Difference Interpolation, Gregory-Newton Backward Difference Interpolation.	18
III	Numerical Integration: Newton- Cote's formulae, Trapezoidal rule, Simpson's 1/3 rule, Simpson's 3/8 rule, Gauss Integration.	12
IV	Methods to Solve System of Linear Equations: Direct method for solving system of linear equations: Gauss elimination, LU decomposition, Cholesky decomposition. Iterative method:Jacobi, Gauss-Seidel.	21
V	Numerical Solution of Ordinary Differential Equations: Single step methods: Picard, Taylor's series, Euler, Runge-Kutta. Multistep methods: Predictor-corrector, Modified Euler, Milne-Simpson.	21

RecommendedTextBooks:

Text Books:

1. S. S. Sastry: Introductory Methods of Numerical Analysis, Prentice Hall India Learning Private Limited, Fifth edition,2012.
2. E. Balagurusamy: Numerical Methods, Tata McGraw Hill Publication, 2017,
- 3.



Reference Books:

1. M. K. Jain, S. R. K. Iyengar, R. K. Jain, Numerical Method for Scientific and Engineering Computation, New Age International (P) Ltd., 1999.
2. Saxena H. C.: Finite Differences & Numerical Analysis, S Chand, 2010,

Suggested Digital Platforms Web links:

<https://epgp.in/libnet.ac.in>

<https://www.highereducation.mp.gov.in/?page=xhziQmpZwkylQo2b/y5G7w= 3D>

Suggested Equivalent online courses:

<https://nptel.ac.in/courses/111106101/>

<https://nptel.ac.in/courses/111107105/>

<https://nptel.ac.in/courses/111107107/>

https://ugemoos.inlibnet.ac.in/index.php/courses/view_pg/1476



RKDF UNIVERSITY, BHOPAL

First Semester

Course	Category	Subject	Subject Code
Bachelor of Computer Application	GEC	8.HERBAL COSMETICS	BCA GEC-103
TotalCredit:4		Max.Marks:100 (Internal:40+External:60)	

Course Outcomes:

1. Students will learn about raw materials used in herbal cosmetics including the skin and hair care, herbal products preparation and their evaluation.
2. Students can seek the opportunity of setting up their own business of herbal cosmetics after this course.

Units	Topic	Duration (In Hours)
I	1.1 Cosmetics - Classification and categories 1.2 Brief history of herbal cosmetics 1.3 Difference between herbal and synthetic cosmetic products, benefits of herbal synthetic cosmetic products, benefits of herbal cosmetic products, 1.4 Challenges in formulating herbal cosmetics.	15
II	1.1 Raw materials, Machinery and Equipments used in preparation of herbal cosmetics 1.2 Processes used in the manufacture of herbal cosmetics 1.3 Plants used in skin care products like scrub, ‘ubtan’ packs, moisturizer etc 1.4 Plants used in hair care products like oil, shampoo, conditioner hair tonic etc.	15
III	1.1 Preparation of- Scrub, face packs, vanishing cream, face wash, soap, moisturizer, talcum powder, sunscreen 1.2 Preparation of- Shampoo, hair oil hair conditioners, hair dye 1.3 Preparation of- toothpaste, tooth powder, ‘Kajal’, nail polish, lipstick, lip balm, deodorant, shaving cream, after shave solution.	15
IV	1.1 Introduction to Aromatherapy, Plants used in aromatherapy 1.2 Method of extraction of essential oils 1.3 Sanitary practices in cosmetic manufacturing 1.4 Basic idea of storage of raw material, pre production preparations, production management, packaging and labeling, marketing and pricing of herbal cosmetics. 1.5 Quality assurance, ISO certification	15

Part- C Learning Resource

Text Books, Reference Books, Other Resources

Suggested Readings:

1. Classification of cosmetic raw materials and adjuncts IS3958 of Indian Standard.
2. Smith R.V., Stewart J.T. Text book of Bip pharmaceutical analysis, Lia and Febiger, Philadelphia(1982).
3. Behl P.N. Srivastava G. Herbs useful in dermatological therapy, CBS (2002).
4. Karnik C.R. Pharmacopoeia standards of herbs, Sri Satguru Publications Delhi(1994)
5. Bore P. Cosmetics analysis: Selective methods with techniques, Marcel Dekker (1985)
6. Sharma P.P Cosmetics – Formulation, Manufacturing and Quality Control Vandana Publication (2014).
7. Panda H. Herbal Cosmetics handbook, Asia Pacific Business Press (2015)
8. Chattopadhyay P.K. Herbal Cosmetics and ayurvedic medicines, National Institute of Industrial research (2008).
9. Panda H. The complete technology book on herbal perfumed and cosmetics, NIIR Project consultancy services(2012).
10. Kirtikar K.R. and Basu B.D. 8 volumes Indian medicinal plant, bio- green books(2012).
11. Drugs and cosmetics acts and rules Govt. of India Publication.
12. Guenther Ernest Vol I The Essential Oils, Ingram short title(2007).
13. Indian Standard Institution Booklets.
14. Nadkarni K.M. Indian Materia Medica, Popular Prakashan(1994).
15. Wealth of India C.S.I.R.
16. Srivastava S.B., Perfume Flavour and Essential Oil Industries, Small Industry Research Institute
17. Das Kuntal, Herbal Plants and their Application in Cosmaceuticals, CBS Publication (2014).
18. Krishnamurthy K.H., Ayurvedic Technical studies and Herbal Cosmetics of Ancient India, B.R. Publishing corporation (2001)
19. Chopra R.N. Nayar S.L., Chopra L.C., Glossary of Indian Medicinal Plants.,National Institute of Science Communciation and information Resource (1956).
20. Saxena Rajan, Marketing Managemnet, McGraw hill Education(2009)
21. Saraf Swarnlata, Saraf Shailendra, Cosmetics a Practical Manual, (2015), Bsp Books Pvt. Ltd.
22. EIRI Board,. Herbal Cosmetics and Beauty Products with Formulations, Engineers India Research Institute, (2015)
23. NIIR Board, Handbook on herbal products National Institute of Industrial Research(2002)



RKDF UNIVERSITY, BHOPAL

First Semester

Course	Category	Subject	Subject Code
Bachelor of Computer Application	GEC	9.COMPUTER FUNDAMENTALS	BCA GEC-103
TotalCredit:4		Max.Marks:100 (Internal:40+External:60)	

Course Outcomes:

On the Completion of this course student will be able-

1. To understand the fundamentals of computer
2. To use computer in his daily life as well as can do assigned official work with ease.
3. Troubleshoot, issues related to working with computer and internet.
4. To communicate through internet as well as can use IT for day to day work.

Units	Topic	Duration (In Hours)
I	<p>Knowing computer: What is computer, Basic Application of computer; Components of computer System, Modern Central Processing Unit (CPU), Video Display Unit, Keyboard and Mouse, Optical storage Devices, Basic of Hard Drive, Concepts of Hardware and Software; Concept of computing, Data and Information; Applications of Information Electronics and Communication Technology; Connecting keyboard, mouse, monitor and printer to CPU and checking power supply.</p> <p>Computer software & its types: System software, Application Software, Types of operating systems, Role of operating system, Utility programs, packages, Communication software, commonly used application software</p>	12
II	<p>Operating computer using GUI Based Operating System: What is an operating system: Basics of Popular Operating Systems; The User Interface, Basics of O.S. Setup; Common utilities.</p> <p>MS Windows Operating System: Definition and Functions, basic components of Windows. Icons. Desktop, Taskbar, Notification Area. Files and Folders, start menu operation, My computer, Network neighborhood, Recycle bin, window explorer, creating copying, moving and deleting files, setting wallpaper, changing the mouse pointer, paint, notepad, setting date and time , screensaver and appearance. Using Mouse, Using Right button of the mouse and moving Icons on the screen, use of common Icons, Status Bar, Using Menu and Menu –selection, Running an application, viewing of files, folders and directories, creating and renaming of files and folders, opening and closing of different windows, using help, creating shortcuts, using window accessories.</p>	12
III	<p>MS Word; Introduction, windows 2007 interface, customizing the word application, document views, creating and editing document. Selecting, deleting ,</p>	12

	<p>replacing text, copying text to another files. Insert, formatting text and Paragraph, using the font, dialog box , paragraph formatting, using bullets and numbering in paragraphs, checking spelling, line spacing, margin, space before and after paragraphs. Basic formatting in MS word 2007, Advance formatting , navigating through a word document, performing a mail merge, A Quick look at Macros, Printing document, Print preview. Excel 2007; Introduction, workbook, worksheet, formatting in excel, MS power Point; Introduction, Creating a presentation.</p>	
IV	<p>Introduction to internet, WWW and Web Browsers; Basic of computer network; LAN, WAN; concept of internet; application of internet; connecting to internet; What is ISP; Knowing the internet; basic of internet, connectivity related troubleshooting, web browsing software, search engine; Understanding URL, Domain name; IP address; Using E-governance website. Basic of electronic mail; Getting an email account; send and receiving emails. Accessing sent emails; Using Emails; documents collaborations; Instant messaging Netiquettes(Internet etiquette)</p>	12
V	<p>Useful Google tools such as drive, sheet, doc, meet, etc. Firewall , computer virus, anti virus software, internet security and privacy Basic of electronic data interchange(EDI) and electronic payment system(EPS) , types of payment system; Digital Cash, Electronic Cheque , Smart Card, Introduction to digital signature and digital certificates.</p>	12

Part- C Learning Resource

Text Books, Reference Books, Other Resources

suggested Readings:

1. <https://edu.gefglobal.org/en/computerbasics/>
2. <https://edu.gefglobal.org/en/subjects/office/>
3. <https://vikaspedia.in/education/digital-literacy/it-literacy-courses-in-associating-with-msup/computer-fundamentals>
4. https://onlinecourses.swayam2.ac.in/nou20_cs03/
5. https://www.tutorialspoint.com/computer_fundamentals/index.htm
6. <https://ecomputernotes.com/e-commerce/electronic-commerce/define-electronic-payment-system-its-requirements-and-payment-methods>
7. <https://edu.gefglobal.org/en/topics/googleapps/>
8. https://onlinecourses.swayam2.ac.in/cec19_cs06/preview
9. <https://nptel.ac.in/courses/106/106/106106092/>
10. <https://vikaspedia.in/education/digital-literacy/it-literacy-courses-in-associating-with-msup/computer-fundamentals>
11. <https://nptel.ac.in/courses/106/103/106103068/>

Suggested Readings:

- Introduction to Computers: C. Xavier, New Age International.
- Computer Fundamentals: Concepts, Systems & Applications: Priti Sinha, Pradeep K., Sinha, BPB Publications
- Fundamentals of Information technology: Alexis Leon & Mathews Leon, Vikas Publishing House, New Delhi.
- Microsoft Office 2019 For Dummies: Wallace Wang, Wiley



RKDF UNIVERSITY, BHOPAL

First Semester

Course	Category	Subject	Subject Code
Bachelor of Computer Application	AECC	ENVIRONMENTAL EDUCATION	BCA-104(AEC)
TotalCredit:4		Max.Marks:100 (Internal:40+ External:60)	

Course Outcomes:

1. To understand the various aspect soft the life forms, ecological processes, and the impact on them by the human during anthropogenic era.
2. To build capabilities to identify relevant environmental issues, analyze the various underlying causes, evaluate the practices and policies, and develop framework to make informed decisions.
3. To develop empathy for all the life forms, awareness and responsibility towards environmental protection and nature preservation.
4. To develop the critical thinking for the shaping strategies such as scientific, social economical, administrative & legal environmental protection, conservation of biodiversity, environmental equity and sustainable development.
5. To prepare for the competitive exams.

Units	Topic	Duration (In Hours)	Marks
I	<p>Environmental and Natural Resources: Multidisciplinary nature Scope and importance of Environment. Component of Environment: Atmosphere,Hydrosphere ,Lithosphere and Biosphere. Brief account of Natural Resources and associated problems: Land Resources ,Water Resources and Energy Recourses. Concept of Sustainability and Sustainable Development</p>	12	20
II	<p>Biome, Ecosystems and Biodiversity: Major Biomes: Tropical, Temperate, Forest, Grassland, Desert, Tundra, Wetland, Estuarine and Marines. Ecosystems: Structure Function and types their Preservation& Restoration Biodiversity and its conservation practices.</p>	12	20
III	<p>Environmental Pollution: Types (Air, Water, Soil, Noise, Marine, Thermal, Nuclear) Control Measure, Management and Associated Problems.</p>	12	20
IV	<p>Management and Social Issues-I Environmental Law and Legislations :Protection and Conversation Acts. Air (Prevention and Control of Pollution) Act Water (Prevention</p>	12	20

	<p>and control of Pollution) Act Wildlife Protection Act Forest Conservation Act Management and Social Issues-II</p>		
V	<p>International Agreement & Programmer. Environmental movements, Communication and public awareness programme. National and International Organizational related to Environment Conservation and Monitoring. Role of Information Technology in Environment and Human Health.</p>	12	20

**Note: Topic/ Topics in Bold Italic represent enhancements made by the college.*

Recommended Books:-

Name of the Book	Author/Authors Name	Publisher	Edition
Ecology; Environmental Science and Conservation	Singh;J.S., SinghS.P .and Guota,SR;	S.Chand Publishing, New Delhi,(2018)	2018
Environmental Law and Policy in India :Cases, Material & Status	Divan,S. and Rosencranz ,A.	Oxford University Press, India	(2002) 2°dEdition
A Textbook of Environmental Studies.	Asthana K Asthana Meera	S.Chand Publishing, New Delhi.	(2007)
Fundamentals of Ecology	Odum, E.P	Philadelphia Saundres	1971
Perceptive in Environmental Studies	Kaushik, Anubha, Kaushik. C.P	New Age International Publishers	2018 6thEdition