



MAHARAJA AGRASEN INTERNATIONAL COLLEGE

NAAC Accredited B+

(Run By Shree Maharaja Agrasen Charitable Trust)

Affiliated to Pt. Ravishankar Shukla University, Raipur

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MAHARAJA AGRASEN INTERNATIONAL COLLEGE, RAIPUR (C.G.)

(B+ Grade by NAAC Affiliated to Pt. Ravishankar Shukla University, Raipur)



Academic Year

2021-22

Syllabus for B.Sc. (Computer Science)

Department of Computer Science

MAHARAJA AGRASEN INTERNATIONAL COLLEGE

(B+ Grade by NAAC Affiliated to Pt. Ravishankar Shukla University, Raipur)

Department of Computer Science
 Academic Year
 2021-22
 B.Sc. I Year

Name of the Program: B.Sc.		Program Code: B.Sc. I
Name of the Course: Programming in C		Max Marks: 50
Course Code: 0806	Total Duration- 90 Hr	Theory: 50

Course Objective:

1. To develop the programming skills in C.
2. To get good knowledge of procedural language approach so that students can make software in the later stage of their course.
3. To an understanding of various concepts of C with the help of which one can create its own data types that can be used globally in different program files.

Syllabus

Unit	Topic	Duration (In Hours)	Marks
1	Fundamentals of C Programming Overview of C	18	10
	History of 'C'. Structure of 'C' program		
	Keywords Telan Data types		
	Constants, Literals and Variables		
	Operators and Expressions Arithmetic operators		
	Relational operator, Logical operators.		
	Expressions, Operator precedence and associativity		
	Type counting Console i/o formatting		
	Unformatted i/o function: Getch (), getchar (), gets () putc () putchar ()		
2	Control Constructs If-else, conditional operators, witch and break, nested conditional branching statements	18	10
	Loops: do while, while, for, Nested loops, break and continue, goto and label, exit function		
	Functions: Definition, function components		
	Function arguments, return value, function call statement function prototype.		
	Types of function, Scope and lifetime of variable, Call by value and call by reference		
Function using arrays function with command line argument User defined function math and character functions, Recursive function.			
3	Array: Array declaration, One and Two dimensional numeric and character arrays, Multidimensional arrays	18	10
	String: String declaration, initialization, string manipulation with		

	without using library function		
	Structure, Union and Enum, Structure: Basics, declaring structure, structure variable		
	type statement, array of structure, array within structure, Nested structure		
	passing structure to function, function string structure		
	Union: basics, declaring union and union variable, Enum declaring enum and enum variable		
4	Pointer: Definition of pointer. Pointer declaration, Using & and operator Void pointer, Pointer to pointer, Pointer in math expression, Pointer arithmetic, Pointer comparison	18	10
	Dynamic memory allocation functions malloc, calloc, realloc and free		
	Pointer vs Array, Array of pointer, Pointer to array, Pointers to function charting pointer		
	Passing function as Argument to function, Pointer to structure, Dynamic array of structure through pointer to structure		
5	File Handling and Miscellaneous Features: File handling, file pointer	18	10
	file accessing function, fopen, tec, fprintf, fscanf, fread, fwrite boof, fflush, rewind, fsck, forror		
	File handling through command line argument, Introduction to C preprocessor #include, #define, Conditional compilation directives #if, #else, #elif, #endif, #ifndef, etc.		

Course Outcome:

1. Student will be able to write program in C Language.
2. Student will be able to develop software in C language.
3. Students will be able to understand all data types and can be able to use data types in different program file.

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

1. 1 Introduction to Programming in C - NPTEL
2. 2 Problem solving through Programming in C - SWAYAM
3. 3 C for Everyone: Programming Fundamentals - Coursera

MAHARAJA AGRASEN INTERNATIONAL COLLEGE

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Department of Computer Science
Academic Year
2021-22
B.Sc. I Year

Name of the Program: B.Sc. I	Program Code: B.Sc. I
Name of the Course: Computer Fundamentals	Max Marks: 50
Course Code: 0805	Total Duration- 90 Hr

Course Objective:

1. To introduce the fundamentals of computing devices and reinforce computer vocabulary, particularly with respect to personal use of computer hardware and software, the Internet, networking and mobile computing.
2. It focuses on such computer literacy that prepares students for life-long learning of computer concepts and skills. Students discover why computers are essential components in education, business and society in this course.

Syllabus

Unit	Topic	Duration (In Hours)	Marks
1	History of computer, Generation of computer, Calculator vs Computer, Digital and Analog computers and its evolution, major components of digital computers Memory addressing capability of CLL Word length and processing speed of computer, Microprocessor, Single chip Microcomputer, Large and small computer, User Interface, Hardware, software and firmware multi programming system, multiuser system. Dumb smart and intelligent terminals computer network and multi-processing LAN parallel processing Flynn's classification of computers. Control flow and data flow computers.	18	10
2	CPU Organization, ALU Control Unit Registration, Instruction for INTEL/8085, Instruction word size, Various addressing mode, interrupts and exception, some special Control Signals, and I/O devices, Instruction cycle fetch and execute operation, time Diagram, data flow.	18	10
3	Main Memory, secondary memory, backup memory, cache memory, real and virtual memory, semiconductor memory, memory controller and magnetic memory, RAM, disks, optical disks magnetic bubble memory, DNSD, destructive and non-destructive readout, Program of data memory and MMU.	18	10

4	I/O devices of micro controller, process, I/O devices, printer, plotter, other output devices, I/O port serial data transfer scheme, Micro controller, signal processor, I/O processor, I/O processor arithmetic processor.	18	10
5	ML, AL, HLL, stack subroutine debugging of program macro, micro programming, Program design, software development, flow & chart multi programming multiuser, multi tasking protection, operating system and utility program, application package.	18	10

Course Outcome: By the end of the course student should be able to

1. Create and collaborate in emergent computing technologies leading to innovative solutions for industry and academia.
2. Use current computing technologies and methods for the design and implementation of solutions in industry and practice continuous learning to maintain and achieve professional and personal excellence.

References:

1. Computer Fundamental – B. Ram

MAHARAJA AGRASEN INTERNATIONAL COLLEGE

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Department of Computer Science
Academic Year
2021-22
B.Sc. First Year

Name of the Program: B.Sc. 1		Program Code:
Name of the Course: Maths I Algebra and Trigonometry		Max Marks: 50
Course Code: 0798	Total Duration- 100 hrs.	

Course Objective: This Course will enable

1. To understand Rank , inverse and properties of matrix.
2. To learn Relation and mapping of functions.
3. To understand Group Theory and Ring Theory.
4. To Provide the knowledge De-Moivre's theorem and its application.

Syllabus

Unit	Topic	Duration (In Hours)	Marks
1	Symmetric. Skew symmetric. Hermitian and skew Hermitian matrices. Elementary operations on matrices. Inverse of a matrix. Linear independence of and column matrices. Row rank, column rank and rank of a matrix Equivalence of column and row ranks. Eigenvalues, eigenvectors and the characteristic equation of a matrix. Cayley Hamilton theorem and its use in finding inverse of a matrix	20	10
2	Applications of matrices to a system of linear (both homogenous and non-homogenous) equations. Theorems on consistency of a system of linear equations. Relations between the roots and coefficients of general polynomial equation in one variable. Transformation of equations. Descartes's rule of signs. Solution of cubic equations (Cardon method). Biquadratic equations	20	10
3	Mappings, equivalence relations and partitions. Congruence modulon Definition of a group with examples and simple properties. Subgroups. Cyclic groups. Coset decomposition. Lagrange's theorem and its consequences. Fermat's and Euler's theorems. Normal subgroups. Quotient groups. Permutation groups. Even and odd permutations. Cayley's theorem	20	10
4	Homomorphism and isomorphism. The fundamental theorem of	20	10

	homomorphism. Introduction, properties and examples of Rings, Sub rings. Integral domain and fields, Characteristic of a rings and field.		
5	De Moivre's theorem and its applications. Direct and inverse circular and hyperbolic functions. Logarithm of a complex quantity. Expansion of trigonometrical functions. Gregory's series. Summation of series.	20	10

Course Outcome: Students will be able to

1. Understand problems based on Rank, Inverse and Properties of matrix.
2. Understand Relation and mapping of functions.
3. Solve problem based on Group Theory and Ring Theory.
4. Solve problem based on De-Moivre's theorem and its Application.

References: Text Book:

1. I.N. Herstein. Topics in Algebra, Wiley Eastern Ltd., New Delhi, 1975
2. K.B. Datta. Matrix and Linear Algebra. Prentice Hall of India Pvt. Ltd. New Delhi, 2000.
3. Chandrika Prasad. Text-Book on Algebra and Theory of equations. Pothishala Private Ltd.
4. Allahabad. 4. S.L. Loney. Plane Trigonometry Part 11. Macmillan and Company. London.
5. P.B. Bhattacharya, S.K. Jain and S.R. Nagpaul, First Course in linear Algebra. Wiley Eastern, New Delhi, 1983.
6. P.B. Bhattacharya. S.K. Jain and S.R. Nagpaul, Basic Abstract Algebra (2 edition).
7. Cambridge University Press, Indian Edition, 1997. 3. S.K. Jain, A. Gunawardena and P.B. Bhattacharya. Basic linear Algebra with MATLAB
8. Key College Publishing (Springer-Verlag), 2001.
9. H.S. Hall and S.R. Knight, Higher Algebra, H.M. Publications, 1994.
10. R.S. Verma and K.S. Shukla, Text Book on Trigonometry. Pothishala Pvt. Ltd.

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Department of Computer Science
Academic Year
2021-22
B.Sc. I Year

Name of the Program: B.Sc. I		Program Code: BSc. I
Name of the Course: Maths II Calculus		Max Marks: 50
Course Code: 0799	Total Duration- 100 Hr	

Course Objective: Students will learn about topics of Calculus concepts such as

1. Limit & Continuity.
2. Derivatives and differentiability.
3. Tracing of Curve.
4. Integration of Different type of Function and Integrals.
5. finding the different type of feature of different curve.
6. Solution of different order differential equation.

Syllabus

Unit	Topic	Duration (In Hours)	Marks
1	ϵ - δ definition of the limit of a function.	20	10
	Basic properties of limits.		
	Continuous function and classification of discontinuities.		
	Differentiability		
	Successive differentiation		
	Le theorem.		
	Maclaurin and Taylor series expansions.		
2	Asymptotes.	20	10
	Curvature.		
	Tests for concavity and convexity.		
	Points of inflexion.		
	Multiple points.		
	Tracing of curves in Cartesian and polar co-ordinates		
3	Integration of irrational algebraic functions and transcendental functions..	20	10
	Reduction formulae.		
	Definite integrals.		
	Quadrature.		
	Rectification.		

	Volumes and surfaces of soli revolution		
4	Degree and order of a differential equation.	20	10
	Equations of first order and first de Equations in which the variables are separable.		
	Homogeneous equations.		
	Linear equation equations reducible to the linear form.		
	Exact differential equations.		
	First order higher equations solvable for x, y, p.		
	Clairaut's form and singular solutions		
	Geometrical met differential equation.		
	Orthogonal trajectories. Linear differential equations with co coefficients.		
Homogeneous linear ordinary differential equations			
5	Linear differential equations of second order	20	10
	Transformation of the equation by c the dependent variable/ the independent variable.		
	Method of variation of parameters.		
	Ordinary simultaneous differential equations.		

Course Outcome:

1. Understanding the concept limit & Continuity.
2. Understanding the differentiation and solution procedure of derivatives
3. Understanding the tracing of curve
4. Understanding the concept of Integral and Integration

References:

1. Calculus (H. K. PATHAK)

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Department of Computer Science
Academic Year
2021-22
B.Sc. I Year

Name of the Program: B.Sc. I		Program Code: B.Sc. I
Name of the Course: Maths III Vector Analysis and Geometry		Max Marks: 50
Course Code : 0800	Total Duration- 90 Hr	

Course Objective: Students will learn

1. To visualize and manipulate multivariable vector valued functions.
2. To presented in graphical, numeric, and symbolic form.
3. To learn to graph, differentiation, integration, and solve applied problems involving parametric equations and vector-valued functions.

Syllabus

Unit	Topic	Duration (In Hours)	Marks
1	Scalar and vector product of three vectors. Product of four vectors Reciprocal Vectors. Vector differentiation. Gradient, divergence and our Vector integration. Theorems of Gauss, Green, Stokes and problems based on these.	18	10
2	Vector integration. Theorems of Gauss, Green, Stokes and problems based on these.	18	10
3	General equation of second degree. Tracing of conics. System of conics, Confocal conies. Polar equation of a conic	18	10
4	Sphere. Cone. Cylinder.	18	10

5	Central Conicoids. Paraboloids. Plane sections of conicoids. Generating lines Confocal Conicoids. Reduction of second-degree equations	18	10
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Course Outcome: By the end of the course, students would be able to:

1. Visualize and manipulate multivariable vector valued functions .
2. Presented in graphical, numeric, and symbolic form.
3. Learn to graph, differentiation, integration, and solve applied problems involving parametric equations and vector-valued functions.

References:

1. N. Saran and S.N. Nigam, Introduction to vector Analysis, Pothishala Pvt. Ltd. Allahabad
2. Dr. H. K. Pathak, Vector Analysis and Geometry
3. Gorakh Prasad and H.C. Gupta, Text Book on Coordinate Geometry. Pothishala P Ltd, Allahabad
4. R.J.T. Bell, Elementary Treatise on Coordinate Geometry of three dimensions, MacMillan India Ltd. 1994
5. I Murray R. Spiegel. Theory and Problems of Advanced Calculus. Schaum Publishing Company, New York
6. Murray R. Spiegel, Vector Analysis, Schaum Publishing Company, New York.
7. Erwin Kreyszig. Advanced Engineering Mathematics, John Wiley & Sons, 1999,
8. Shanti Narayan, A Text Book of Vector Calculus, S. Chand & Co., New Delhi
9. S.L. Loney, The Elements of Coordinate Geometry, Macmillan and Company, London
10. P.K. Jain and Khalil Ahmad, A Text Book of Analytical Geometry of two Dimensions, Wiley Eastern Ltd., 1994.
11. PK Jain and Khalil Ahmad, A Text Book of Analytical Geometry of three Dimensions Wiley Eastern Ltd., 1999. N. Saran and R.S. Gupta, Analytical Geometry of three Dimensions, Pothishala Pvt. Ltd. Allahabad

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Department of Computer Science
Academic Year
2021-22
B.Sc. I Year

Name of the Program: B.Sc. I	Program Code: B.Sc. I
Name of the Course: Physics (I) (Mechanics, Oscillations And Properties Of Matter)	Max Marks: 50
Course Code: 0793	Total Duration- 90 Hr

Course Objective:

1. To empower the students to develop the idea about the behavior of physical bodies.
2. To provide the basic concepts related to the motion of all the objects around us in daily life.
3. To build foundation to various applied fields in science and technology especially in the field of mechanical engineering.
4. To study the properties of materials and matter.

Syllabus

Unit	Topic	Duration (In Hours)	Marks
1	Cartesian, Cylindrical and Spherical coordinate system, Inertial and non-inertial frames of reference, uniformly rotating frame, Coriolis force and its applications. Motion under a central force, Kepler's laws. Effect of Centrifugal and Coriolis forces due to earth's rotation, Center of mass (C.M., Lab and C.M. frame of reference, motion of C.M. of system of particles subject to external forces, elastic and inelastic collisions in one and two dimensions, Scattering angle in the laboratory frame of reference, Conservation of linear and angular momentum, Conservation of energy	18	10

2	Rigid body motion, rotational motion, moments of inertia and their products, principal moments & axes, introductory idea of Euler's equations. Potential well and Periodic Oscillations, case of harmonic small oscillations, differential equation and its solution. kinetic and potential energy, examples of simple harmonic oscillations spring and system, simple and compound pendulum, torsional pendulum	18	10
3	Bifilar oscillations, Helmholtz resonator, LC circuit, vibrations of a magnet, oscillations of two masses connected by a spring. Superposition of two simple harmonic motions of the same frequency, Lissajous figures, damped harmonic oscillator, case of different frequencies Power dissipation, quality factor, examples, driven (forced) oscillator, transient and steady states, power absorption, resonance	18	10
4	E as an accelerating field, electron gun, case of discharge tube, linear accelerator, E as deflecting field- CRO sensitivity, Transverse B field, 150 deflection, mass spectrograph curvatures of tracks for energy determination, principle of a cyclotron. Mutually perpendicular E and B fields velocity selector, a resolution. Parallel E and I fields, positive ray parabolas, discovery of isotopes, elements of mass spectrography, principle of magnetic focusing lens	18	10
5	Elasticity: Strain and stress, elastic limit, Hooke's law, Modulus of rigidity, Poisson's ratio, Bulk modulus, relation connecting different elastic- constants, twisting couple of a cylinder (solid and hollow), Bending moment, Cantilever, Young modulus by bending of beam Viscosity: Poiseuille's equation of liquid flow through a narrow tube, equations of continuity. Euler's equation, Bernoulli's theorem, viscous fluids, streamline and turbulent flow, Poiseuille's law, Coefficient of viscosity, Stokes's law, Surface tension and molecular interpretation of surface tension, Surface energy, Angle of contact, wetting	18	10

Course Outcome: Students will be able to

1. Understand the behavior of physical bodies.
2. Identify and understand the motion of objects in the universe.
3. Apply the laws of mechanics along with necessary mathematics for solving problems.
4. Understand the properties and behavior of the materials.

References:

1. Unified Physics – R. P. Goyal

MAHARAJA AGRASEN INTERNATIONAL COLLEGE

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Department of Computer Science
Academic Year
2021-22
B.Sc. I Year

Name of the Program: B.Sc. I	Program Code: B.Sc. I
Name of the Course: Physics (2) (Electricity, Magnetism and Electromagnetic Theory)	Max Marks: 50
Course Code: 0794	Total Duration- 90 Hr

Course Objective:

1. To study the different laws of electrostatics.
2. To study various methods, physical fields, potentials and electronic components.
3. To acquire the concept of electromagnetism and its application.
4. To provide the concepts of various phenomena in the universe.

Syllabus

Unit	Topic	Duration (In Hours)	Marks
1	Repeated integrals of a function of more than one variable, definition of a double and triple integral. Gradient of a scalar field and its geometrical interpretation, divergence and curl of a vector field, and their geometrical interpretation, line, surface and volume integrals, thus of a vector field. Gauss's divergence theorem, Green's theorem and Stokes's theorem and their physical significance Kirchoff's law, Ideal Constant-voltage and Constant-current Sources. Thevenin theorem, Norton theorem, Superposition theorem Reciprocity theorem and Maximum Power Transfer theorem	18	10

2	Coulomb's law in vacuum expressed in Vector forms, calculations of E for simple distributions of charges at rest, dipole and quadrupole fields. Work done on a charge in an electrostatic field expressed as a line integral, conservative nature of the electrostatic field Relation between Electric potential and Electric field, dipole in a uniform electric field and its energy, flux of the electric field. Gauss's law and its application E due to (1) an Infinite Line of Charge, (2) a Charged Cylindrical Conductor, (3) an Infinite Sheet of Charge and Two Parallel Charged Sheets, capacitance, electrostatic field energy, force per unit area of the surface of a conductor in an electric field, conducting sphere in a uniform electric field.	18	10
3	Dielectric constant, Polar and Non Polar dielectrics, Dielectrics and Gauss's Law, Dielectric Polarization, Electric Polarization vector P. Electric displacement vector D, Relation between three electric vectors, Dielectric susceptibility and permittivity. Polarizability and mechanism of Polarization, Lorentz local field. Claus Mosotti equation, Debye equation, Ferroelectric and Paraelectric dielectrics, Steady current, current density J, Eddy currents and continuity equation, rise and decay of current in L, CR and LCR circuits, decay constants, AC circuits, complex numbers and their applications in solving AC circuit problems, complex impedance and reactance, series and parallel race, Q-factor, power consumed by an AC circuit, power factor	18	10
4	Magnetization Current and magnetization vector M. three magnetic vectors and their lationship Magnetic permeability and susceptibility. Diamagnetic, paramagnetic and femagnetic substances. B.H. Curve, cycle of magnetization and hysteresis, Hysteresis loss, Biot-Savart's Law and its applications: B due to (1) a Straight Current Carrying Conductor and (2) Current Loop. Current Loop as a Magnetic Dipole and its Dipole Moment (Analogy with Electric Dipole). Ampere's Circuital law (Integral and Differential Forms).	18	10
5	Electromagnetic induction, Faraday's law, electromotive force, integral and differential forms of Faraday's law Mutual and self inductance, Transformers, energy in a static magnetic field. Maxwell's displacement current, Maxwell's equations, electromagnetic field energy density. The wave equation satisfied by E and B, plane electromagnetic waves in vacuum, Poynting's vector.	18	10

Course Outcome: Students will be able to

1. Understand the basic concepts of electrostatics.
2. Familiarize themselves with various measurement devices by which they can measure physical quantities with accuracy.
3. Understand the mechanism and applications of electromagnetism in daily life.
4. Acquire basic practical knowledge related to surroundings through the experiments.

References:

1. Berkeley Physics Course, Electricity and Magnetism, Ed. EM. Purcell (Mc Graw- Hill).
2. Halliday and Resnik, Physics, Vol. 2.
3. DJ Griffith, Introduction to Electrodynamics (Prentice-Hall of India).
4. Raitz and Milford, Electricity and Magnetism (Addison-Wesley).
5. AS Mahajan and AA Rangwala, Electricity and Magnetism (Tata Mc Graw-hill).
6. AM Portis, Electromagnetic fields.
7. Pugh & Pugh, Principles of Electricity and Magnetism (Addison-Wesley).
8. Panofsky and Phillips, Classical Electricity and Magnetism, (India Book House

MAHARAJA AGRASEN INTERNATIONAL COLLEGE**(B+ Grade by NAAC Affiliated to Pt. Ravishankar Shukla University, Raipur)**

Department of Computer Science
Academic Year
2021-22
B.Sc. I Year

Name of the Program: B.Sc. I	Program Code: B.Sc. I
Name of the Course: Foundation Course Paper II (English Language)	Max Marks: 75
Course Code: 0792	Total Duration- 90 Hr

Course Objective:

1. The primary objective of English learning is to equip the student with requisites of grammar.
2. The syllabus provides an in-depth knowledge about Indian culture, Indian Art and Tradition, Scientific knowledge and Literature content.
3. The focus of the subject is to generate adequate English Writing Skills and Presentation techniques.
4. There is extensive learning of the Prose Content and minimal learning of Poetry.
5. The step-by-step learning pattern of grammar is a positive trait of all the objectives

Syllabus

Unit	Topic	Duration (In Hours)	Marks
1	Basic Language skills: Grammar and Usage, Grammar and Vocabulary based on the prescribed text. To be assessed by objective multiple-choice tests	18	20

2	Comprehension of an unseen passage. This should imply not only (a) an understanding of the passage in question, but also b) a grasp of general language skills and issues with reference to words and usage within the passage and (c) the Power of short independent composition based on themes and issues raised in the passage. To be assessed by both objective multiple choice and short answer type tests.	18	20
3	Composition: Paragraph writing	18	20
4	Letter writing (one Formal and one Informal), Two Letters to be attempted of 5 marks each. One formal and one informal.	18	20
5	Short prose pieces (Fiction and non-fiction) short prose, the pieces should cover a range of authors, subjects and contexts. With poetry if may sometimes be advisable to include pieces from earlier periods, which are often simpler than modern examples. In all cases, the language should be accessible with a minimum of explanation and reference to standard dictionaries.	18	20

Course Outcome:

1. The student becomes well versed in grammar and its applicability.
2. The student is more connected to his/ her roots with the content of the syllabus.
3. The practice sessions of the Writing skills develop expertise of the students.
4. The prose content is easy to learn and its expression is simple.
5. Revision of grammar and question papers make the student handle his exams with expertise

References:

1. For B.A. /B.Sc./B.Com. /B.H.Sc. I year Foundation course, English Language: English Language and Indian Culture Published by M.P. Hindi Granth Academy Bhopal.

MAHARAJA AGRASEN INTERNATIONAL COLLEGE

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Department of Computer Science

Academic Year

2021-22

B.Sc. First Year

Name of the Program: B.Sc.	Program Code: B.Sc.I
Name of the Course: Foundation Course Paper I (Hindi Language)	Max Marks: 75
Course Code: 0791	Total Duration- 90 Hr

Course Objective: पाठ्यक्रम के माध्यम से विद्यार्थियों में हिंदी भाषा की समझ विकसित करना मुख्य उद्देश्य है। व्याकरण द्वारा भाषा की समझ विकसित होगी। भाषा के मानकीकरण से मानक हिंदी की जानकारी प्रदान करना पाठ्यक्रम का ध्येय है। देवनागरी लिपि के इतिहास से परिचित करवाना, पारिभाषिक शब्दावली एवं हिंदी पदनाम द्वारा हिंदी भाषा के तकनीकी शब्दावली का ज्ञान करवाना। तकनीकी युग में हिंदी भाषा का कार्य कम्प्यूटर द्वारा संपन्न करते समय आने वाली तकनीकी समस्याओं से अवगत करवाना एवम् निराकरण बताना। संक्षिप्तिकरण के ज्ञान से दैनिक कार्य में सरलता लाने का प्रयास करना।

Syllabus

Unit	Topic	Duration (In Hours)	Marks
1	पल्लवन	18	15
	पत्राचार		
	अनुवाद		
	पारिभाषिक शब्दावली		
	हिंदी के पदनाम		
	ईदगाह (कहानी) – मुंषी प्रेमचंद		
2	षब्द शुद्धि, वाक्य शुद्धि, षब्द ज्ञान – पर्यायवाची षब्द	18	15

	विलोम षब्द		
	अनेकार्थी षब्द		
	समश्रुत षब्द		
	अनेक षब्दों के लिए एक षब्द		
	मुहावरें – लोकोक्तियाँ		
	भारत वंदना (कविता) – सूर्यकान्त त्रिपाठी 'निराला'		
3	देवनागरी लिपि	18	15
	स्वरूप एवं देवनागरी लिपि की विशेषताएँ		
	हिन्दी अपठित गद्यांश		
	संक्षेपण		
	हिन्दी में संक्षिप्तीकरण		
	भोलाराम का जीव (व्यंग्य) –हरिषंकर परसाई		
4	कम्प्यूटर का परिचय	18	15
	कम्प्यूटर में हिंदी का अनुप्रयोग		
	षिकागो से स्वामी विवेकानंद का पत्र		
5	मानक हिन्दी भाषा के अर्थ	18	15
	मानक हिन्दी भाषा के स्वरूप, विशेषता		
	मानक भाषा		
	उपमानक		
	अमानक भाषा		
	सामाजिक गतिशीलता – प्राचीन काल, मध्य काल, आधुनिक काल		
	मानक हिन्दी भाषा के अर्थ		

Course Outcome:

1. समग्र पाठ्यक्रम विद्यार्थियों को हिंदी भाषा में दक्षता दिलाती है।
2. अनुवाद कला का ज्ञानार्जन कैरियर निर्माण में सहायक होती है।
3. हिंदी साहित्य में संचित कोश का लाभ हिंदी भाषा ज्ञान से प्राप्त होगा।
4. अनेक प्रतियोगी परीक्षाओं में हिंदी भाषा की अनिवार्यता होती है। अतः यह पाठ्यक्रम परीक्षा के दृष्टिकोण से उत्तम है।

References:

1. भारतीयता के अमर स्वर – मध्यप्रदेश हिन्दी ग्रन्थ अकादमी
2. आधुनिक हिन्दी व्याकरण और रचना – डॉ. वासुदेवनन्दन प्रसाद

MAHARAJA AGRASEN INTERNATIONAL COLLEGE

(B+ Grade by NAAC Affiliated to Pt. Ravishankar Shukla University, Raipur)

Department of Computer Science
Academic Year
2021-22
B.Sc. I Year

Name of the Program: B.Sc.	Program Code: B.Sc. I
Name of the Course: Environmental Studies	Max Marks:
Course Code: 0828	Total Duration- 90 Hr

Course Objective:

1. To help the social groups and individuals to acquire knowledge of pollution and environmental degradation.
2. To initiate the interaction between various components which is crucial for life.
3. To maintain the proper balance on the earth, as it recycles the resources through a complete cycle, in which various process are involved.

Syllabus

Unit	Topic	Duration (In Hours)	Marks
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1	<p>The Multi-Disciplinary Nature of Environmental Studies Definition, Scope and Importance Natural Resources: - Renewable and Nonrenewable Resources <u>Forest resources</u>: - Use and over-exploitation, deforestation, Timber extinction, mining dams and their effects on forest and tribal people and relevant forest Act. <u>Water Resources</u>: - Use and Over-utilization of surface and ground water, floods drought, conflicts water, dams' benefits and problems and relevant Act. <u>Mineral Resources</u>: - Use and exploitation environment effects of extracting and using mineral resources. <u>Food Resources</u>: - World Food problem, Changes Caused by agriculture and overgrazing effect of modern agriculture, Fertilizer pesticide problems, water logging Salinity. <u>Energy Resources</u>: - Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources. <u>Land Resources</u>: - Land as a resource, land degradation, man induced landslides soil erosion and desertification.</p>	18	20
2	<p>ECOSYSTEM Concept, Structure and Function of ecosystem Production, Consumers and decomposers Energy flow in the ecosystem Ecological succession Food Chain, Food webs and ecological pyramids. Introduction, Types, Characteristics Features, Structure and Function of Forest, Grass, Desert and Aquatic Ecosystem. Biodiversity and its Conservation Introduction – Definition, Genetic. Species and ecosystem diversity. Bio-geographical classification of India. Value of biodiversity, Consumptive use, productive use, social ethics, aesthetic and option values. Biodiversity at global, national and local levels. India as mega-diversity nation. Hot sports of biodiversity. Threats to biodiversity: habitat loss, poaching of wildlife, man-wild life conflict. Endangered and endemic species of India. Conservation of biodiversity: In situ and Ex-situ Conservation of biodiversity.</p>	18	20

3	<p>ENVIRONMENT Causes effect and Control measures of Air, water, Soil, marine, noise, nuclear pollution and Human Population. Solid water management: Causes, effects and control measures of urban and industrial wastes. Role of Individual in prevention of pollution. Disaster Management: Floods, earthquake, cyclone and landslides. Environmental Management From Unsustainable to sustainable development. Unban problem related to energy. Water conservation rain water harvesting, watershed management. Resettlement and rehabilitation of people, its problems and concerns. Environmental ethics: Issues and possible solutions. Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Wasteland reclamation. Environment Protection Act: Issues involved in enforcement of environmental legislation. Role of information Technology in Environment and Human Health.</p>	18	20
4	<p>Human Right: General back ground and historical perspective: - Historical development and concept of human Rights, Meaning and definition of Human Rights, Kind and classification of Human Right. Protection of Human Rights under the UNO, Charter, Protection of Human Rights Under the Universal Declaration of Human Rights, 1989 Convention on the Elimination of all forms of Discrimination against women. Convention on the Rights of the Child, 1989.</p>	18	20
5	<p>Human Right Under the Constitution of India: Fundamental Rights under the Constitution of India. Directive Principles of State Policy under the Constitution of India. Enforcement of Human Rights in India. Protection of Human Rights under the Human Rights Act, 1993 National Human Rights Commission. State Human Rights Commission and Human Rights court in India. Fundamental Duties under the Constitution of India.</p>	18	20

Course Outcome:

1. Students would be capable of individuals to acquire knowledge of the environment beyond the immediate environment including distant environment.
2. Students would be capable of developing Practical skills and individuals to develop skills required for making discriminations in form, shape, sound, touch, habits and habitats. Further, to develop ability to draw unbiased inferences and conclusions.
3. Students would be capable to work effectively in group or team to achieve goals and cans show initiative and leadership abilities.

References:

1. Basu, M. and Xavier, S., Fundamentals of Environmental Studies, Cambridge University Press, 2016.
2. Mitra, A. K and Chakraborty, R., Introduction to Environmental Studies, Book Syndicate, 2016.
3. Enger, E. and Smith, B., Environmental Science: A Study of Interrelationships, Publisher: McGraw-Hill Higher Education; 12th edition, 2010.
4. Basu, R.N, Environment, University of Calcutta, 2000.

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