KOLHAN UNIVERSITY

Chaibasa, Jharkhand, India

Proposed Syllabus for
Four Year Undergraduate Programme (FYUGP)
of

Bachelor of Science in Information Technology (B.Sc. IT)

Semester - 1

With Effect From
Academic Year 2022 - 2023

As Per Revised Curriculum and Credit Framework for the FYUGP under the provisions of NEP - 2020

B.Sc.I.T. Course Structure F.Y.U.G.P.

Sem.	Paper Code	Paper Title		L–T–P	Credits	Contact Hours
I	AEC–1	*Language and Communication Skills*: Hindi Composition			2	30
	VAC–1	*Value Added Course – 1*	(i) Understanding India (ii) Environmental Studies		4	60
	SEC–1	Digital Education			3	45
	MDC–1	Introduction to Computers			3	45
	MN–1A	Th: Fundamentals of Information Technology Pr: Lab on MS Office		3–0–1	4	75
	MJ–1	Th: C Programming Language Pr: C Programming Language Lab		3–0–1	4	75

Marks Distribution

Subjects	Credits	FM	Semester Internal Examination	End Semester University Examination
Ability Enhanced Courses	2	50	---	50
Value Added Courses	2	50	---	50
Skill Enhancement Courses	3	75	---	75
Multi-Disciplinary Courses	3	75	---	75
		Th Pr	Th	Th Pr
MN 1A	4	75 25	15	60 25
MJ 1	4	75 25	15	60 25

Choice of Subjects

SI. No.	Major Subjects	MDC/Minor
1	B.Sc. (IT)/ B.Sc. (Env. and Water Mgt.)/ B.A. (Mass Communication)/ B.C.A.	Physics Chemistry Geology Commerce Mathematics Statistics History Economics Pol. Sc. Geography Sociology Cyber Defence

MN-1A: Fundamentals of Information Technology		
3 Credits	**45 Class Hours**	**Semester I.**

OBJECTIVES

- Understand the basics of information technology
- Understand the Computer Architecture.
- Identify the number of variables and their simplification importance.
- Understand different types Input/Output Peripherals devices.
- Identify Register Transfer, Micro-operations and Central Processing Unit
- Describe performance evaluation of computers, computer architecture and organization, computer arithmetic, Memory, and CPU design.

Course Outcome: Students will learn the architecture of computer, peripheral devices, knowledge of fundamental concepts of computers and information technology.

Unit 1	**Introduction to Computer. (5 classes)** Introduction; Digital and Analog Computers; Characteristics of Computer; History of Computer; Generations of Computer; Classification of Computer; The Computer System; Application of Computers.
Unit 2	**The Computer System Hardware. (15 classes)** Computer Architecture Introduction, Central Processing Unit (CPU) Memory, Communication between Various Units of a Computer System, Memory- RAM, ROM. Input/ Output Peripherals Introduction, Keyboard, Pointing Devices, Speech Recognition, Digital Camera, Scanners, Optical Scanners. Introduction, Classification of Output, Hard Copy Output Devices, Printers, Plotters, Computer Output Microfilm (COM), Soft Copy Output Devices, Monitors, Audio Output, Projectors, Terminals.
Unit 3	**Computer Software. (8 classes)** Introduction; Types of Software; System Software; Application Software; Software Acquisition; Operating System (Introduction, Objectives of Operating System, Types of OS, Functions of OS, Process Management, Memory Management, File Management.
Unit 4	**Computer Memory. (7 classes)** Introduction; Memory Representation; Memory Hierarchy; CPU Registers; Cache Memory; Primary Memory; Secondary Memory; Access Types of Storage Devices; Magnetic Tape; Magnetic Disk; Optical Disk; Magneto-Optical Disk; How the Computer uses its memory
Unit 5	**The Internet and Internet Services (5 classes)** Introduction; History of Internet; Uses of Internet; Introduction to Internet of Things (IoT), Cloud Computing, Introduction to E-commerce
Unit 6	**Working with windows**: (**5 classes)** Introduction of windows, Components of MS Office, How to create a Folder, Copying and cutting files, Renaming, Programs, Documents, Mail merge

Books:

1) Introduction to computer Science, ITL Education solution Limited, R&D Wing, PEARSON Education and Edition 2004

Reference Books:

1) Rajaraman V. – Fundamental of Computers, Prentice Hall of India Pvt. Ltd., New Delhi – 2nd edition, 1996.
2) Peter Nortorns, " Introduction to Computer", TMH, 2004

MN–1 (Pr): Lab of MS Office		
1 Credit	**15 Class Hours (30 Hours)**	**Semester I.**

COMPUTER SOFTWARE TOOLS (MS WORD, EXCEL)

MS WORD: 5 classes

- Creating, editing, saving and printing text documents
- Font and paragraph formatting
- Simple character formatting
- Inserting tables, smart art, page breaks
- Using lists and styles
- Working with images
- Using Spelling and Grammar check
- Mail Merge

MS EXCEL: 5 classes

- Spreadsheet basics
- Creating, editing, saving and printing Spreadsheet
- Working with functions & formulas
- Graphically representing data: Charts & Graphs
- Speeding data entry: Using Data Forms

MS POWER POINT: 5 classes

- Opening, viewing, creating, and printing slides
- Applying auto layouts
- Adding Custom Animation
- Using Slides transition
- Graphically representing data: Charts & Graphs

MJ–1 (Th): Problem Solving and Programming with C		
3 Credit	**45 Class Hours**	**Semester I.**

Objectives

- To understand about the programming language
- To develop C Programs using basic Programming Constructs, Loops Arrays and Strings
- To develop applications in C using Functions , Pointers and Structures
- To perform I/O operations and File Handling in C

Course Outcomes

After the completion of this course, students will be able to:

- Choose the loops and decision-making statements to solve the problem.
- Implement different Operations on arrays.
- Use functions to solve the given problem.
- Understand pointers, structures and unions.
- Implement file Operations in C programming for a given application.

Detailed Syllabus:

Unit 1 5 classes	**C language fundamentals**: Introduction to C, Character Set, Keywords, Identifiers, Constants, Variables, Storage class, Data types, Operators & Expressions, Header files, Library files, Pre-processor directives, #include and #define.
Unit 2 10 classes	**Decision making and Branching:** Decision making with if statement– Simple if statement, The if …. Else statement, Nesting of if …. Else statement, The else if ladder, The switch-case statement, The? : Operator. **Decision making and Looping:** The while statement, The do statement, The for statement, Jumps in loops.break ,continue,goto statement
Unit 3 10 classes	**Arrays:** One - dimensional arrays, Declaration of one – dimensional arrays, Two – dimensional arrays, Declaration of two – dimensional arrays, Multi – dimensional arrays. **Character Arrays and String:** Declaring and initializing stringvariables, Reading string from terminal, writing string to screen,Putting string together, Comparison of two strings, String handlingfunctions, Other features of strings
Unit 4 8 classes	**User defined functions:** A multi – function program, Definition offunction, Function calls, Function declaration, Category of functions,Nesting of functions, Recursion, Passing arrays to functions, Passingstrings to functions
Unit 5 6 classes	**Structures, Unions and File Handling**: Defining a structure, Declaring structure variables, Accessing structure members, Arrays of structures, Arrays within structures, Structures within structures, Structures and functions, Union.
Unit 6 6 classes	**Pointers:** Understanding pointers, Accessing the address of a variable, declaring pointer variables, Pointer expressions, Array of pointers, Pointers to function, Pointers and structures. **File Management:** Defining and opening a file, Closing a file, Input/ Output operations on files

Books:

1)Y. Kanetkar, "Let Us C", BPB Publication, 13th Edition.
2)E.Balagurusamy," Programming in ANSI C", TMH, Sixth Edition.

MJ–1 (Pr): Programming using C Lab		
1 Credit	**15 Class Hours (30 Hours)**	**Semester I**

OBJECTIVES:

- To develop programs in C using basic Programming Constructs
- To develop applications in C using Arrays and Strings
- To design and implement applications in C using Functions, Structures
- To develop applications in C using Files

List of Programs as Assignments:

- Write a C program to find ASCII value of a character entered by the user.
- Write programs using decision-making constructs.
- Write a program to find whether the given year is leap year or not? (Hint: not every centurion year is a leap. For example, 1700, 1800 and 1900 is not a leap year)
- Write a C program to perform the simple Calculator operations, namely, addition, subtraction, multiplication, and division.
- Write a program to check whether a given number is Armstrong number or not?
- Write a program to check whether a given number is odd or even?
- Write a C program to print pattern

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- Write a program to find out the average of 4 integers.
- Write a program to display array elements using two dimensional arrays.
- Write a program to perform swapping using function.
- Write a program to display all prime numbers between two intervals using functions.
- Write a program to reverse a sentence using recursion.
- Write a program to find the factorial of a given number using Recursion.
- Write a program to find the GCD of two numbers using Recursion.
- Write a program to get the largest element of an array using the function.
- Write a program to concatenate two strings.
- Write a program to find the length of String.
- Write a program to find the frequency of a character in a string.
- Write a program to store Student Information in Structure and Display it.
- The annual examination is conducted for 10 students for five subjects.
- Write a program to read the data and determine the following:
  (a) Total marks obtained by each student.
  (b) The highest marks in each subject and the marks of the student who secured it.
  (c) The student who obtained the highest total marks.
- Insert, update, delete and append telephone details of an individual or a company into a telephone directory using random access file.
- C Program to read name and marks of n numbers of students and store them in a file.

PROVISIONAL SYLLABUS OF SEMESTER I UNDER FYUGP AS PER REVISED GUIDELINES OF NEP 2020 FOR ACADEMIC SESSION 2022-26

KOLHAN UNIVERSITY

CHAIBASA, JHARKHAND

UNIVERSITY DEPARTMENT

OF

HINDI

FOUR YEAR UG PROGRAMME (FYUGP)

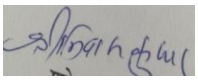
HINDI SYLLABUS OF SEMESTER – I
(As Per Revised Guidelines of NEP 2020)
To Be Effective From: Academic Session 2022-26

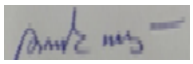
University Department of Hindi, Kolhan University, Chaibasa

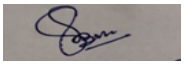
Course of Study for four year undergraduate programme (FYUGP) under state university of Jharkhand.

As per regulations of NEP 2020 in the State of Jharkhand, the revised four year undergraduate programme (FYUGP) course syllabus and credit frame work in Hindi been prepared the following members of Board of studies (BOS) of University Department of Hindi, held on 05-04-2023

1) **Santosh Kumar**
   (Head, University Department of Hindi)
   Kolhan University, Chaibasa
   
   (Chairman)

2) **Dr. Sriniwash Kumar**
   Principal Department of Hindi
   J.L.N. College Chakradharpur
   
   (Subject Expert)

3) **Dr. Kishor Sahu**
   HOD, Department of Hindi
   Tata College, Chaibasa
   
   (Member)

4) **Dr. Suchita Barda**
   HOD Deepartment of Hidni
   Mahila College Chaibasa
   
   (Member)

5) **Dr. Suprabha Tuti**
   HOD, Department of Hindi
   Kashi Sahu College Saraikela
   
   (Member)

PROVISIONAL SYLLABUS OF SEMESTER I UNDER FYUGP AS PER REVISED GUIDELINES OF NEP 2020 FOR ACADEMIC SESSION 2022-26

Semester 1

AEC-I **2 Credits**

हिन्दी व्याकरण एवं अनुवाद

पाठ्यक्रम के इस भाग के अधिगम परिणाम निम्वत होंगे– **15 Lec. Hours**

- विद्यार्थीगण हिन्दी व्याकरण एवं हिन्दी अनुवाद से परिचित होंगे

इकाई – 1 क. हिन्दी व्याकरण एवं रचना – संज्ञा, सर्वनाम, विशेषण, क्रिया

ख. उपसर्ग, प्रत्यय, संधि, समास

इकाई – 2 प्रमुख प्रशासनिक/पारिभाषिक शब्द एवं उनके अनुवाद (हिन्दी से अंग्रेजी व अंग्रेजी से हिन्दी) वाक्य शुद्धि, पत्र लेखन, अवेदन, निबंध लेखन **15 Lec. Hours**

Semester-I/II/III -(MDC1/2/3)

Course Title: Introduction to Statistics

Max. Marks: 75

UNIT I

Introduction: Definition and scope of Statistics, concepts of statistical population and sample. Scales of measurement -nominal, ordinal, interval and ratio. Variables and attributes, Diagrammatical Representation of Data, Summarization of Data: Frequency Distribution and Graphical Presentation.

UNIT II

Measures of Central Tendency: mathematical and positional. Measures of Dispersion: range, quartile deviation, mean deviation, standard deviation, coefficient of variation, moments, measures of skewness and kurtosis.

UNIT III

Bi-variate data: Definition, scatter diagram, correlation, rank-correlation. Fitting of linear and quadratic regression using principle of least squares. Theory of attributes and consistency of data, independence and association of attributes, measures of association and contingency for 2x2 tables.

Suggested Reading:

1. S. C. Gupta, V. K. Kapoor, 12th Edition, (2017), Fundamental of Mathematical Statistics, Sultan Chand & Sons.
2. Miller, I. and Miller, M. (2006). John E. Freund's Mathematical Statistics with Applications, (7th Edn.), Pearson Education,Asia.
3. Mood, A. M. Graybill, F. A. and Boes, D.C. (2011). Introduction to the Theory of Statistics, 3rd Edn., (Indian Edition), Tata McGraw-Hill Pub. Co. Ltd.

KOLHAN UNIVERSITY, CHAIBASA
FYUGP SEMESTER -I UNDER NEP
SEC-1 (SKILL ENHANCEMENT COURSE)
DIGITAL EDUCATION

CREDITS: 03

Course Objectives:
This course is specially designed for better understanding of digital education in India. The course has been designed to introduce key concepts in digital education to the students to sharpen their understanding of importance and significance of digital education in India. The students need to develop a critical thinking about the development of India in the background of expanding digital networks and our constant dependence on them in our day-to-day life.

Learning Outcome

- Students will understand the meaning of digital education and its importance.
- They will be able to focus on different digital platform, its utility and its applications.
- The students will be exposed to different tools of digital education available in India.
- They will understand the importance of E-Learning in the changing context of Digital India.
- They will come to know about their responsibility as citizen in digital growth in India.

UNIT I: Introduction to Digital Education 5 Classes
Meaning & Evolution of Digital Systems. Role & Significance of Digital Technology, digital education vs traditional education, advantages and disadvantages of digital education.

UNIT II: Digital Education Tools (10 Classes+ 5 Hands on Sessions)
Information & Communication Technology & Tools
Interactive tools- Microsoft Teams, Google Classroom, Linkedin
Creative Tools - Google Slides, Google Spreadsheets, Google form, Youtube)

UNIT III: Digital Education in India (10 Classes + 5 Hands on Sessions)

Government initiatives for Digital education in India: SWAYAM, E-Pathshala, National digital library of India (NDL India), DigiLocker. Advantages & challenges in digital education in India.

UNIT IV: E- Governance 10 Classes)
Introduction of E-Governance in India, Types of E-Governance-G2C (Government to Citizen), G2E (Government to Employee), G2B (Government to Business), G2G (Government to Government), E – Governance in Jharkhand.

Suggested Readings:

1. E-Governance in India: Initiatives and issues by R.P.Sinha

2. Information & Communication Technology (ICT) in Education by Dr. Vanaja M,Dr. S Rajasekar, Dr. S. Arulsamy.

3. Digital India: Understanding Information, Communication and Social Change by Pradip N.

References:

1. www.slideshare.net

2. www.lisportal.com/en/lis-blog

KOLHAN UNIVERSITY,

CHAIBASA

Syllabus for FYUGP, NEP-2020
UG – Environmental Studies (2022 onwards)

Designed by

Dr. Basant Shubhankar
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Assistant Professor
Univ. Dept. of Zoology
KU, Chaibasa

EXAMINATION FRAMEWORK FOR VAC-1

Paper Type	Credits	Full Marks	Pass Marks	End Semester Examination
VAC(Theory)	2	50	20	50

END SEMESTER UNIVERSITY EXAMINATION (ESE):

- For End Semester Examination (ESE 50 marks, 2Hrs Exam), there will be two group of questions. Question No.1 will be very short answer type compulsory question in Group A consisting of five questions of 1 mark each. Group B will contain descriptive type five questions of fifteen marks each, Out of which any three are to answer.

Semester-I
Course Title: Environmental Studies (VAC-1)
THEORY (02 Credits)

Unit	Content of Environment Studies	30 Hours
Unit 1	**Introduction to Environmental Studies**	**1 Hour**
	Components of environment: atmosphere, hydrosphere, lithosphere, and biosphere; Scope and importance; Concept of sustainability and sustainable development.	
Unit 2	**Ecosystems**	**5 Hours**
	Definition and concept of Ecosystem. Structure of ecosystem (biotic and abiotic components); Functions of Ecosystem: Physical (energy flow), Biological (food chains, food web, ecological succession), and Biogeochemical (nutrient cycling) processes. Concepts of productivity, ecological pyramids and homeostasis. Types of Ecosystems.	
Unit 3	**Natural Resources**	**5 Hours**
	Land resources; Soil erosion and desertification; Impacts of mining and dam building on environment; Water resources: Natural and man-made sources; Uses of water; Over exploitation of surface and ground water resources; Floods, droughts, and international & interstate conflicts over water; Energy resources: Renewable and non-renewable energy sources; Use of alternate energy sources.	
Unit 4	**Biodiversity and Conservation**	**5 Hours**
	Definition of Biodiversity; Levels of biological diversity; Biodiversity hotspots; Endemic and endangered species of India; IUCN Red list criteria and categories; Threats to biodiversity; Biodiversity conservation strategies: in-situ and ex-situ methods of conservation; National Parks, Wildlife Sanctuaries, and Biosphere reserves; Biological Indicator species.	
Unit 5	**Environmental Pollution**	**4 Hours**
	Environmental pollution: causes, effects, and controls; Pollutants and it's types; Nuclear hazards and human health risks; Solid waste management.	
Unit 6	**Global Environmental Issues and Policies**	**5 Hours**
	Climate change, Global warming, Ozone layer depletion, and Acid rain; International agreements and programs related to climate and environmental issues; Sustainable Development Goals; Environment legislation in India: Wildlife Protection Act, 1972; Water (Prevention and Control of Pollution) Act, 1974; Forest (Conservation) Act 1980; Air (Prevention & Control of Pollution) Act, 1981; Environment Protection Act, 1986; Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006.	
Unit 7	**Environment and Ecology (with reference to Jharkhand state)**	**5 Hours**
	Geographical feature: Soil, Climate, River, lakes, flora & fauna,	

	National parks & Wildlife Sanctuaries, Polices & Programmes related to conservation of forest in context to Jharkhand. **Industry in Jharkhand and its impact on Environment:** large scale Industry (Iron & Steel, Mining & Mineral Extraction, Chemical & Explosive, Cement, Agro based and Automotive) and small-scale Industry (Handloom sector, Tassar & Lac industry, Sericulture, Stone industry). **Mineral profile & Tourist Spots of Jharkhand** (Hill Station, Waterfalls, Water spots, Religious Tourist Place, Cultural & Ethnic Tourist spots.	

Suggested Readings:

- Gadgil, M., & Guha, R. 1993. This Fissured Land: An Ecological History of India. Univ. of California Press.
- Rao, M.N. & Datta, A.K. 1987. Waste Water Treatment. Oxford and IBH Publishing Co. Pvt. Ltd.
- Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012. Environment. 8th edition. John Wiley & Sons.
- Sengupta, R. 2003. Ecology and economics: An approach to sustainable development. OUP.
- Singh, J.S., Singh, S.P. and Gupta, S.R. 2014. Ecology, Environmental Science and Conservation. S. Chand Publishing, New Delhi.
- Sodhi, N.S., Gibson, L. & Raven, P.H. (eds). 2013. Conservation Biology: Voices from the Tropics. John Wiley & Sons.
- Thapar, V. 1998. Land of the Tiger: A Natural History of the Indian Subcontinent.
- Warren, C. E. 1971. Biology and Water Pollution Control. WB Saunders.

Kolhan University, Chaibasa
Four Year Undergraduate Programme (FYUGP)
Common Courses, Code: VAC-1, Credits: 2, Sem-I

Value Added Course-1

Understanding India

UNIT I: Introducing India (2 lectures)

I. The Land of India: landscape, mountains and rivers

II. The People of India: demography and languages

III. The Name of our Country: Jambudvipa, Sindhu (Indus), Inde, Hind, Hindustan, Bharat India

UNIT II: The Heritage of India: Unity in Diversity (10 lectures)

I. **Architecture and Sculpture**: Indus Valley town planning, rock cut architecture, major styles of temples, Mughal architecture, modern and contemporary architecture, stone and metal sculpture

II. **Painting:** Ajanta murals, Mughal paintings, Madhubani paintings, paintings of Jharkhand (Kohbar, Sohrai, Jadopatia, etc.).

III. **Music and Dance:** Overview of various forms of music and dances in India; Chau dance of Jharkhand and Odisha

IV. **Science, Technology and Medicine**: A general survey of the progress of science, technology and medicine in ancient India

UNIT III: The Knowledge System of India (4 lectures)

I. Traditional Knowledge System: Gurukuls, Pathsalas, Tols, Maktabs, Madrasas

II. Beginnings of Modern Education: Main features of British Government's educational policies

III. Growth of higher and technical education in India

UNIT IV: The Indian Economy (4 lectures)

I. Features of the Indian economy from past to present (agriculture, industry and trade)

UNIT V: The Making of Contemporary India (10 lectures)

I. The struggle for Independence (1885-1947)

II. Framing of the Indian Constitution; Fundamental Rights and Duties

III. India's Foreign Policy: Main Elements (Non Alignement, Panchsheel)

IV. Panchayati Raj in India with special reference to PESA in Jharkhand

Suggested Readings

NCERT, classes 6-12 books on History, Political Science, Economics, Geography etc.

A. L. Basham, *A Cultural History of India*, Oxford University Press, 1997

A.L. Basham, *A Wonder that was India*, Rupa, New Delhi, 1994

B.C. Deva, *Indian Music*, ICCR, 1976

Braj, B. Kachru, et.al., Languages in South Asia, Cambridge University Press, 2013

Hemant, *Jharkhand*, Prakashan Sansthan, New Delhi, 2008

Herman Kulke and Deitmar Rothermund, *A History of India*, Taylor and Francis, 2016

Krishna Chaitanya, *A Profile of Indian Culture*, The Indian Book Company, New Delhi, 1976

N.R. Ray, *An Approach to Indian Art*, Publication Bureau, Chandigarh, 1974

R.S. Sharma, *India's Ancient Past*, Oxford University Press, 2020

R.C. Majumdar (ed.), *History and Culture of Indian People* (Relevant Volumes and Chapters), Bhartiya Vidya Bhawan, Bombay.

S.C. Ghosh, *History of Education in Modern India, 1758-1986*, Orient Longman, Hyderabad, 1995

Romila Thapar, *The Prnguin History of Early India: From the Origins to AD 1300*, Penguin India, 2003

Tirthankar Ray, *The Economic History of India 1857-1947*, OUP, 2006

Vijay Joshi and I.M.D. Little, *India's Economic Reforms, 1991-2001*, OUP, 1996