FOUR YEAR UNDERGRADUATE PROGRAM (NEP–2020)
Program: Bachelor in Science (2024 -28)
DISCIPLINE – COMPUTER SCIENCE
SESSION – 2024 -25

DSC -01 to 08		DSE -01 to 12	
Code	**Title**	**Code**	**Title**
CSSC -01T	Computer Fundamental and Operating System	CSSE -01	Data Communication and Networking
CSSC -01P	**Lab 1**: Operating Systems (DOS, Windows, Linux)	CSSE -02	Computer System Architecture
CSSC -02T	Programming in C++	CSSE -03	Cyber Security and Cyber Law
CSSC -02P	**Lab 2**: Programming in C++	CSSE -04	Introduction to Artificial Intelligence
CSSC -03T	Data Structure	CSSE -05	Computer Graphics
CSSC -03P	**Lab 3**: Data Structure Using C++	CSSE -06T	Machine Learning
CSSC -04T	Relational Database Management System	CSSE -06P	**Lab 8**: Machine Learning
CSSC -04P	**Lab 4**: Relational Database Management System (Oracle/MySQL)	CSSE -07	Software Engineering
CSSC -05T	Programming in Java	CSSE -08	Theory of Computation
CSSC -05P	**Lab 5**: Programming in Java	CSSE -09	Soft Computing
CSSC -06T	Web Technology	CSSE -10	Advanced Operating Systems
CSSC -06P	**Lab 6**: Web Technology	CSSE -11	Cloud Computing
CSSC -07T	Programming in Python	CSSE -12	Major Project
CSSC -07P	**Lab 7**: Programming in Python		
CSSC -08T	Fundamental of IoT and Applications		
CSSC -08P	**Lab 9**: Fundamental of IoT and Applications		
DGE -01 & 02		**VAC**	
CSGE -01T	Computer Fundamental and Operating System	CSVAC-01	Artificial Intelligence
CSGE -01P	**Lab 1**: Operating System (DOS, Windows, Linux)	**SEC**	
CSGE -02T	Programming in C++	CSSEC-01	Multimedia and Animation
CSGE -02P	**Lab 2**: Programming in C++		

Program Outcomes (PO):

- Gain a complete exposure to the theories and practices of Computer science.
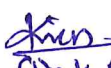- Get transformed into a skilled learner and active programmer, enabling the students to focus on their

higher studies.

- Value computer professionals and programmers.
- Explore how the concepts and applications of Computer science lead to innovative thinking with a problem-solving attitude.

Program Specific Outcomes (PSO):

- Understand the basic Computer knowledge and practical application in operating system.
- Understanding the concept of programming and develop program in C++.
- Understanding the concept of data structure and implementation with C++.
- Understanding the concept of DBMS and implementation in MySQL /Oracle.
- Understanding the concept of OOPs and Java programming and develop program in Java.
- Understanding the concept of web technology and its implementation with HTML/CSS/DHTML/PHP.
- Understand the basic concept of internet of things (IOT).
- Understanding the basic concept of cyber security and cyber law.
- Understanding the basic concept of Artificial Intelligence.
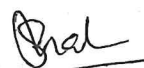
Dr. H.S.Hota
Chairman

(Dr.K.B.Dubey)
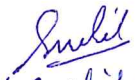
(Dr.S.K.Sahu)
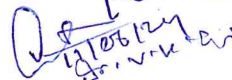
Ko.Hangha

(Dr. Anil Sharma)

Dr.Swati Jain)

(R.Khautley)

(Sushil kumar Sahu)

Dr.V.K.Ant

(Dr.Aramike Shubha Sharma)

(Suresh Thakur)

Shailendra Arya

Reetudra Kumar

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CURRICULUM STRUCTURE

SCHEME

PROGRAM: B.SC.

DISCIPLINE: COMPUTER SCIENCE

Semester	Course Type	Course Code	Course Title	Total Credit	Total Marks	
					Max	Min
1st Semester	DSC (Major/Core)	CSSC-01T	Computer Fundamental and Operating System	3	100	40
		CSSC-01P	**Lab 1**: Operating Systems (DOS, Windows and Linux)	1	50	20
2nd Semester	DSC (Major/Core)	CSSC-02T	Programming in C++	3	100	40
		CSSC-02P	**Lab 2**: Programming in C++	1	50	20
3rd Semester	DSC (Major/Core)	CSSC-03T	Data Structure	3	100	40
		CSSC-03P	**Lab 3**: Data Structure Using C++	1	50	20
	DSE	CSSE-01	Data Communication and Networking	4	100	40
4th Semester	DSC (Major/Core)	CSSC-04T	Relational Database Management System	3	100	40
		CSSC-04P	**Lab 4**: Relational Database Management System (Oracle/MySQL)	1	50	20
	DSE	CSSE-02	Computer System Architecture	4	100	40
5th Semester	DSC (Major/Core)	CSSC-05T	Programming in Java	3	100	40
		CSSC-05P	**Lab 5**: Programming in Java	1	50	20
	DSE	CSSE-03	Cyber Security and Cyber Law	4	100	40
6th Semester	DSC (Major/Core)	CSSC-06T	Web Technology	3	100	40
		CSSC-06P	**Lab 6**: Web Technology	1	50	20
	DSE	CSSE-04	Introduction to Artificial Intelligence	4	100	40
7th Semester	DSC (Major/Core)	CSSC-07T	Programming in Python	3	100	40
		CSSC-07P	**Lab 7**: Programming in Python	1	50	20

Dr. H.S Hota
Chairman (Dr. K.B. Dubey)
(Dr. S.K Sahu)
(Seshil kumar Sahu) ANJEETA KUJUR Kotangle
(R.Khuntey)
(Dr. Aromike Shukla)
(Suresh Thakur)
Shailendra An.

		CSSE-05	Computer Graphics	4	100	40
	DSE	CSSE-06T	Machine Learning	3	100	40
		CSSE-06P	**Lab 8**: Machine Learning	1	50	20
		CSSE-07	Software Engineering	4	100	40
		CSSE-08	Theory of Computation	4	100	40
8th Semester	DSC (Major/Core)	CSSC-08T	Fundamental of IoT and Applications	3	100	40
		CSSC-08P	**Lab 9:** Fundamental of IoT and Applications	1	50	20
	DSE	CSSE-09	Soft Computing	4	100	40
		CSSE-10	Advanced Operating Systems	4	100	40
		CSSE-11	Cloud Computing	4	100	40
		CSSE-12	Major Project	4	100	40

Dr. H.S. Hota
chairman   (Dr. K.B. Dubey)   (Dr SK Sahu)   Durgesh Kotangle   (Dr. S. Jain)   (Dr. Arsmila Shukla)

(Sushil Kumar Sahu)

(Suresh Thakur)   Shailendra Anya   ANJEETA KUJUR

FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28)
DEPARTMENT OF COMPUTER SCIENCE
COURSE CURRICULUM

PART- A: Introduction

Program: Bachelor in Science (CS) *(Certificate / Diploma / Degree/Honors)*	Semester - I	Session: 2024-2025

1	Course Code	CSSC-01T
2	Course Title	**Computer Fundamental and Operating System**
3	Course Type	**DSC (Discipline Specific Course)**
4	Prerequisite	*As per program*
5	Course Learning Outcomes (CLO)	After Completing this course, students will be able to: • Study and use of basic concepts and terminology of information technology. • Organize files and documents on storage devices. • Acquire knowledge of ICT and Internet applications. • Develop information technology solutions by evaluating user requirements in advance trends of IT. • Acquire knowledge of MS-Excel, MS-PowerPoint and MS-Access.
6	Credit Value	3 Credits	*Credit = 15 Hours - Learning & Observation*
7	Total Marks	Max. Marks: 100	Min Passing Marks: 40

PART -B: Content of the Course

Total No. of Teaching–Learning Periods (01 Hr. per period) - 45 Periods (45 Hours)

Unit	Topics (Course contents)	No. of Period
I	**Indian knowledge System and Computer Science :** Number System in India-Historical evidence, Salient aspect of Indian Mathematics, Bhuta-Samkhya system, Katapayadi system, pingala and the binary system, Sulbha Sutra as modern arithmetic and numerical mathematics. **Fundamental of Computer**: History of computer, Generation of computer, Types of Computers, Block diagram of CPU, Digital and Analogue computers and its evolution. Major components of digital computers, Types of digital computers, Memory addressing capability of CPU, Microprocessors, Single chip Microcomputer, Users interface, hardware, software and firmware, Number system & Computer Codes.	13
II	**Peripheral devices:** I/O Devices-Keyboard, Mouse, Monitor, Impact and Non-Impact Printers, Plotters, Scanner, other Input/output devices I/O Port, Programmable and Non-Programmable I/O port, Inbuilt I/O ports, Parallel and Serial ports, USB, IEEE 1394, AGP, Serial data transfer scheme, Microcontroller, Signal Processor, I/O processor, Arithmetic Processor.	11
III	**Memory:** Memory hierarchy, Primary and Secondary Memory, Cache memory, Virtual Memory, Direct Access storage devices (DASD) Destructive and Non-destructive Readout, Program and data memory, Memory Management Unit (MMU).	10
IV	**Operating System Concepts:** Evolution of Operating Systems: Types of operating systems. Introduction to DOS, History Booting process of DOS, Internal and External commands of DOS, File Structure of DOS. Windows Operating System: History, Version of Windows, Basics of Windows, Windows Explorer, Windows Accessories, Control Panel. Introduction to Linux Operating System, Structure of Linux, Linux command cd, md, rm, mv, cp, ls, cat, find, grep, head, tail.	11

Keywords	*Computer, Input /Output Devices, Memory, Operating System, DOS, Linux.*

Name and Signature of Convener & Members of CBoS:

Jn H.S Hota
Chairman

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PART-C: Learning Resources

Text Books, Reference Books and Others

Text Books Recommended:

- P.K. Sinha,Computer Fundamentals, BPB Publication, Sixth Edition.
- V. Rajaraman, Fundamentals of Computers, PHI Sixth Edition.
- B. Ram, Computer Fundamentals Architecture and Organization, New Age International Publishers, Fifth Edition.
- Raja Raman V. Fundamental of Computers, Prentice Hall of India, New Delhi.
- Peter Baer Galvin, Greg Gagne,Operating System Concepts – Abraham Silberschatz, 8th edition, Wiley-India, 2009.

Reference Books Recommended:

- Chetan Shrivastava, Fundamentals of Information Technology, Kalyan Publishers.
- Dr. Santosh Kumar Miri, Computer Fundamentals and Office Automation, Iterative International Publisher IIP.
- Alexis Leon and Mathews Leon, Fundamentals of Information Technology, Vikash Publication.
- Leon and Leon, Fundamental of IT, Leon Tec world.
- Aksoy and Denardis, Introduction to Information Technology, Cengage learning.
- Suresh K. Basandra, Computers Today, Galgotia Publications.
- Dennis P.Curtin, Kim Foley, Kunai Sen and Cathleen Morin, Information Technology – The breaking wave, TMH.
- Kogent Solution Inc., OFFICE 2013 in Simple Steps, DremTech Press.
- Kogent Learning Solutions Inc., Access 2010 in Simple Steps
- Andrew S. Tanenbaum, Modern Operating Systems, 3rd Edition, PHI
- Elmasri, Carrick, Levine, Operating Systems: A Spiral Approach – TMH Edition
- Akshay Singh , Operating System, RGCSM Publications

Online Resources:

- Indian Knowledge System and computer Science from Swayam portal
  https://onlinecourses.swayam2.ac.in/imb23_mg53/preview
- Fundamentals of Computer :
  https://www.w3schools.blog/computer-fundamentals-tutorial
- Fundamentals of Computer, Memory:
  https://www.tutorialspoint.com/computer_fundamentals/index.htm
- Fundamentals of Computer , Windows Operating System :
  https://vikaspedia.in/education/digital-litercy/it-literacy-courses-in-associating-with-msup/computer-fundamentals
- Fundamentals of Computer:
  https://nptel.ac.in/courses/106/103/106103068/
- Introduction to Operating System:
  https://www.w3schools.in/operating-system/tutorials/
- Introduction to Operating System:
  https://www.javatpoint.com/windows.
- Peripheral Devices
  https://www.tutorialspoint.com/what-are-peripheral-devices
- Windows :
  https://www.javatpoint.com/windows
- Linux:
  https://www.javatpoint.com/what-is-linux

PART -D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:

Maximum Marks:	100 Marks	
Continuous Internal Assessment (CIA):	30 Marks	
End Semester Exam (ESE):	70 Marks	

Continuous Internal Assessment (CIA): (By Course Teacher)	Internal Test / Quiz-(2): 20 & 20 Assignment / Seminar - 10 Total Marks - 30	Better marks out of the two Test / Quiz obtained marks in Assignment shall be considered against **30** Marks
End Semester Exam (ESE):	Two section – A & B Section A: Q1. Objective – 10 x1= 10 Mark; Q2. Short answer type- 5x4 =20 Marks Section B: Descriptive answer type qts.,**1 out of 2** from each unit-4x10=40 Marks	

Name and Signature of Convener & Members of CBoS:

Dr. H.S. Mata
Chairman

Sunil,

(Suresh Thakur)

Shailindra Anji

Jitendra Kumar.

Srinivik-Imfu
11/06/24

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FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28)
DEPARTMENT OF COMPUTER SCIENCE
COURSE CURRICULUM

PART- A: Introduction

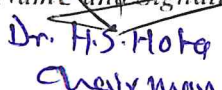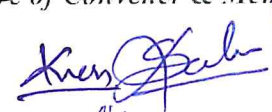| Program: Bachelor in Science (CS) (Certificate / Diploma / Degree)		Semester - I	Session: 2024-2025
1	Course Code	CSSC-01P	
2	Course Title	Lab 1: Operating Systems (DOS, Windows, Linux)	
3	Course Type	Practical	
4	Prerequisite	*As per program*	
5	Course Learning Outcomes (CLO)	At the end of this course, the students will be able to: • Understand the fundamental concepts of DOS, Windows and Linux Operating System. • Understand basics of DOS commands and its types. • Understand features of Windows Operating system. • Understand comparative features of DOS and Windows Operating systems. • Explore functionality of Linux.	
6	Credit Value	1 Credits	*Credit =30 Hours Laboratory or Field Learning/Training*
7	Total Marks	Max. Marks: 50	Min Passing Marks: 20
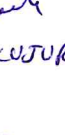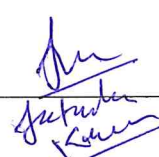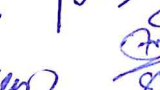
PART -B: Content of the Course

Total No. of learning-Training/performance Periods: 30 Periods (30 Hours)

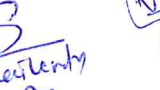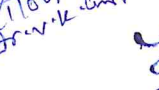| Module	Topics (Course contents)	No. of Period
List of Practical Experiment	1. Demonstrate different Directory naming listing structure with all options. 2. Create one file and rename file using DOS command 3. Demonstrate all Internal DOS Commands with Output. 4. Demonstrate all external DOS Commands with output. 5. Introduction to Windows and Familiarity with its controls. 6. Study and use of Desktop, my computer, recycle bin, Task bar. 7. Working with Files and Folder. 8. Use of various window applications: Calculator, notepad and MS-Paint. 9. Explaining control panel options. 10. Working with printers. 11. Create a file using Linux command. 12. Write a Linux command which lists all files and directories. 13. Demonstrate use of grep command. 14. Create Directory using Linux command and create 3 different files in this directory. 15. Delete above created files and directory using Linux command. 16. Explaining various flavors of Linux. **Note:** Concerned teacher can add additional practical exercises as per requirement.	30
Keywords	*DOS, Windows, Linux.*	

Name and Signature of Convener & Members of CBoS:

Dr. H.S.Hota
Chairman

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PART–C: Learning Resources

Text Books, Reference Books and Others

Text Books Recommended:

- Rusell A Stultz, MS DOS 6.22 BPB Publications
- Brain Underdahl,Teach yourself Windows 2000, Wiley Publications.

Reference Books Recommended:

- Peter Norton, Maximizing Windows, Teachmedia.
- Ray Duncan, Advances MS-DOS Programming, BPB
- Akshay Singh, Operating System, RGCSM Publications
- Ray Yao, Shell Scripting in 8 Hours

Online Resources:

- DOS: https://www.javatpoint.com/ms-dos-operating-system
- Windows: https://www.javatpoint.com/windows
- Linux: https://www.javatpoint.com/what-is-linux
- Fundamentals of Computer, Windows Operating System: https://vikaspedia.in/education/digital-litercy/it-literacy-courses-in-associating-with-msup/computer-fundamentals
- DOS: https://www.geeksforgeeks.org/ms-dos-operating-system/

PART -D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:

Maximum Marks:	50 Marks
Continuous Internal Assessment (CIA):	15 Marks
End Semester Exam (ESE):	35 Marks

Continuous Internal Assessment (CIA): (By Course Teacher)	Internal Test / Quiz-(2): 10 & 10 Assignment/Seminar +Attendance - 05 Total Marks - 15	Better marks out of the two Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks
End Semester Exam (ESE):	Laboratory / Field Skill Performance: On spot Assessment A. Performed the Task based on lab. work - 20 Marks B. Spotting based on tools & technology (written) – 10 Marks C. Viva-voce (based on principle/technology) - 05 Marks	Managed by Course teacher as per lab. status

Name and Signature of Convener & Members of CBoS:

Dr.H.S.Hota
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(Devesh Kesker)

Shailndra
Ann

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