

<i>Part A Introduction</i>			
<i>Program :</i> <i>Certificate</i>	<i>Class : BCA II semester</i>	<i>Year : 2022</i>	<i>Session : 2022-2023</i>
1	<b>Course Code</b>	<b>S1-BCAB2T</b>	
2	<b>Course Title</b>	Operating System -II	
3	<b>Course Type (Core Course/Elective/Generic Elective/Vocational)</b>	Minor	
4	<b>Pre-Requisite (if any)</b>	Open for all	
5	<b>Course Learning outcomes (CLO)</b>	After the completion of this course, a successful student will be able to: <ul style="list-style-type: none"> <li>• Describe the importance of computer system resources and the role of operating system in their management policies and algorithms.</li> <li>• Specify objectives of modern operating system and describe how operating systems have evolved over time.</li> <li>• Understand various process management concepts and can compare various scheduling techniques, synchronization and deadlocks.</li> <li>• Describe the concepts of memory management techniques.</li> <li>• Identify the best suited process management technique for any process.</li> <li>• Describe various file operations, file allocation methods and disk space management.</li> <li>• To understand and identify threats to operating systems and the security features to guard against them.</li> <li>• Learn to operate the Linux system.</li> </ul>	
6	<b>Credit Value</b>	<b>Theory - 4 Credits Practical - 2 Credits</b>	
7	<b>Total Marks</b>	Max. Marks : 100	Min. Marks : 40
<b>Part B - Content of the Course</b>			
<b>No. of Lectures (in hours per week) : 2 Hours per week</b>			
<b>Total no. of Lectures: 60 Hrs.</b>			
Unit	Topics		No. of Lectures
1	<b>Disk management:</b> Structure, disk scheduling algorithms (FCFS, SSTF, SCAN, C-SCAN, LOOK), swap space management, disk reliability,		6

	recovery.	
<b>2</b>	<b>Security:</b> Security threats, security policy mechanism, protection, trusted systems, authentication and internal access authorization, windows security.	<b>14</b>
<b>3</b>	<b>LINUX:</b> Introduction, History and features of Linux, advantages, hardware requirements, for installation, Linux architecture, file system of Linux – boot block, super block, inode table, and data blocks. Linux standard directories.	<b>14</b>
<b>4</b>	Linux kernel, partitioning the hard drive for Linux, installing the Linux system, system – startup and but shut-down process, init and run levels, Process, swap, partition, Fdisk, checking disk free spaces. Difference between CLI OS & GUI OS, Windows V/s Linux, importance of Linux Kernel, files and directories. Concept of open source software.	<b>12</b>
<b>5</b>	<b>Indian contribution to the field:</b> the BOSS operating system, open source softwares, growth of LINUX, aryabhatt Linux, contributions of innovators – RajenSheth, Sunder Pichaiect	<b>12</b>

### Part C- Learning Resources

#### Text Books, Reference Books, Other resources

**Text Books:**

- A Silberschatz, P.B. Galvin, G. Gagne, Operating systems concepts, 8<sup>th</sup> Edition, John Wiley Publications.
- A.S. Tanenbaum, Modern Operating systems, 3<sup>rd</sup> Edition, Pearson Education.
- Opearting System by Peterson.
- Linux by Sumitabh Das.
- मध्य प्रदेश हिंदी ग्रंथ अकादमी से प्रकाशित विषय से संबंधित पुस्तकें

**Reference Books:**

- G. Nutt operating systems: A Modern perspective, 2<sup>nd</sup> Edition Pearson Education.
- W. Stallings, Operating systems, Internals & Design principles, 8<sup>th</sup> Edition, Pearson Education.
- M. Milenkovic, Operating Systems – Concepts and design, Tata McGraw hill.
- Operating system design and concepts by Milan Milenkovic.

**Suggested digital platform web links:**

<https://web.iitd.ac.in/~minati/MTL458.html>  
<https://www.cse.iitb.ac.in/~mythili/os/>  
<https://www.youtube.com/watch?v=aCJ3YgoolHQ>

**Suggested equivalent online courses:**

<https://nptel.ac.in/courses/106/102/106102132/>

### Part D- Assessment and Evaluation

**Internal Assessment:**

**Continuous Comprehensive Evaluation (CCE) :**

Shall be based on allotted assignments and class

**External assessment: University exam (UE):**

**Time: 02.00 Hours**

tests. The marks shall be as follows:			
<b>Assessment and presentation of assignment</b>			
Class Test I <b>(Objective Questions)</b>			
Class Test II <b>(Descriptive Questions)</b>			
Class Test III <b>(Based on OS commands)</b>			
Total		<b>Total</b>	100
Any remarks / suggestions:			

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1	<b>Course Code</b>	S1-BCAB2P	
2	<b>Course Title</b>	Operating System Lab -II	
3	<b>Course Type (Core Course/Elective/Generic Elective/Vocational)</b>	Minor	
4	<b>Pre-Requisite (if any)</b>	Open for all	
5	<b>Course Learning outcomes (CLO)</b>	After the completion of this course, a successful student will be able to: <ul style="list-style-type: none"> <li>• Operate the Linux System.</li> <li>• Do Administration</li> <li>• Use Vi Editor</li> </ul>	
6	<b>Credit Value</b>	<b>Practical – 2 Credits</b>	
7	<b>Total Marks</b>	Max. Marks : 100	Min. Marks : 40
<b>Part B – Content of the Course</b>			
<b>No. of Lectures (in hours per week) : 1 Hours per week</b>			
<b>Total no. of Lectures: 30 Hrs.</b>			
Unit	Suggestive list of Practical		No. of Lectures
	<b>Linux:</b> a. <b>Linux Directory Commands:</b> pwd, mkdir, rm-rf, ls, cd, cd /, cd ~ b. <b>Linux File Commands:</b> touch, cat, cat >, cat >>, rm, cp, mv,		<b>30 Hrs.</b>

	<p>rename</p> <p><b>c. Linux permission commands:</b> su, id, useadd, passwd, groupadd, chmod, groupdel, chown, chgrp</p> <p><b>d. Linux File Content &amp; Filter Commands:</b> head, tail, tac, more, less, grep, cat, cut, grep, comm, sed, tee, tr, uniq, wc, od, sort, diff.</p> <p><b>e. Linux Utility Commands:</b> find, bc, locate, date, cal, sleep, time, df, mount, exit, clear, gzip, gunzip.</p> <p><b>f. Linux Networking commands:</b> ip, ssh, mail, ping, host</p> <p><b>g. Edit Crontab file:</b> to wall message on system on particular time automatically.</p> <p><b>h. Vi editor:</b> create file, edit save and quit. Highlighting the searched term within a file. Cut, yank, undo.</p>	
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- Linux Bible
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<https://www.youtube.com/watch?v=aCJ3YgoolHQ>

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<https://www.youtube.com/watch?v=OHCMfsNpqCc>