

B.Sc. (Internet and Mobile Technologies)

Semester	Subject Code	Subject
Sem-I	IMT-101	Object Oriented Concepts and C++
Sem-I	IMT-102	Data Structures
Sem-I	IMT-103	Concepts of Computer Science
Sem-I	IMT-104	Communication Skills in English – I
Sem-I	IMT-105	Punjabi (Compulsory) / Basic Punjabi
Sem-I	IMT-106	Practical – Based on Data Structures and C++
Sem-I	IMT-107	Practical – Based on SQL
Sem-I	IMT-108	Drug Abuse: Problem, Management and Prevention (Compulsory Paper)
Sem-III	IMT-301	Java and Android Programming
Sem-III	IMT-302	Open Source Technologies
Sem-III	IMT-303	Advanced PHP
Sem-III	IMT-304	Practical Based on Java and Android Programming
Sem-III	IMT-305	Project Based on Advanced PHP and CMS
Sem-III	IMT-306	Environmental Studies – I
Sem-V	IMT-501	Social Network Programming
Sem-V	IMT-502	Mobile Application Designing
Sem-V	IMT-503	Mobile Application Development(iOS)
Sem-V	IMT-504	Content Management System (CMS)
Sem-V	IMT-505	Practical based on Social Network Programming using CMS
Sem-V	IMT-506	Project work based on Mobile Application Designing and Developing
Sem-VII	IMT-701	Android Application Development
Sem-VII	IMT-702	Cloud and Mobile Computing
Sem-VII	IMT-703	Data Warehousing and Data Mining
Sem-VII	IMT-704	Mobile Commerce
Sem-VII	IMT-705	Practical Based on Android Application Development
Sem-VII	IMT-706	Practical Based on the Weka Tool for Data mining

**LESSON PLAN B.SC (INTERNET AND MOBILE TECHNOLOGIES)
SEMESTER-I**

OBJECT ORIENTED CONCEPTS AND C++

Topic	Notes/Strategies/ Resources	Time
Introduction to Object Oriented Approach	<ul style="list-style-type: none">• Students will learn about various programming Paradigms• Students would be able to Differentiate between Conventional programming approach and object oriented approach.• Various Characteristics of Object Oriented Programming• Disadvantages of Object oriented Approach <p>✓ From Programming in C++ by Anshuman Sharma</p>	5 Days
Data Input and Output	<ul style="list-style-type: none">• Students will learn about various Input / Output Functions• Input using Cin• Output Using Cout <p>✓ From Programming in C++ by Anshuman Sharma</p>	5 Days
Objects and Classes	<p>Students will have understanding of Class Specification</p> <ul style="list-style-type: none">• Class objects• Accessing Class Members• Data Hiding, Encapsulation and abstraction• Class, Object and Memory <p>✓ From Object oriented programming in C++ By Robert Lafore</p>	8 Days

Constructors and Destructors	<ul style="list-style-type: none"> • Students will Learn about what is a Constructor? • Types of Constructors • Constructor Overloading • Copy Constructor • Destructors <p>✓ From Object oriented programming in C++ By Robert Lafore</p>	10 Days
Operator Overloading	<ul style="list-style-type: none"> • Students will learn about what is Operator Overloading ? • How Unary operators are Overloaded ? • How Binary Operators are Overloaded? • Friend Function • Overloading Unary operators using friend function • Overloading Binary operators using friend function • Pitfalls of operator Overloading <p>✓ From Object oriented programming in C++ By Robert Lafore</p>	8 Days
Type Conversion	<ul style="list-style-type: none"> • Students will have understanding of Data Type Conversion • Converting from Basic to user defined Type • Converting from user defined type to basic • Converting from one user defined type to another user defined type. <p>✓ From Programming in C++ by Anshuman Sharma</p>	5 days
Inheritance	<ul style="list-style-type: none"> • Students will be acquainted with use of inheritance • Derived class declaration 	10 Days

	<ul style="list-style-type: none"> • Public, Private and protected Inheritance • Overriding member functions • Forms of Inheritance • Ambiguity in multiple Inheritance • Virtual Base Class • Abstract class • Constructors and Inheritance • Destructors and Inheritance • Advantages of Inheritance • Disadvantages of Inheritance <p>✓ From Programming in C++ by Anshuman Sharma</p>	
Virtual Functions	<ul style="list-style-type: none"> • Students will learn about what is Virtual Function and its use? • Pure Virtual Functions • This pointer • Static Functions <p>✓ From Programming in C++ by Anshuman Sharma</p>	2 Days
Polymorphism	<ul style="list-style-type: none"> • Students will be acquainted Polymorphism • Compile time Polymorphism • Run time Polymorphism <p>✓ From Programming in C++ by Anshuman Sharma</p>	4 days

**LESSON PLAN B.SC (INTERNET AND MOBILE TECHNOLOGIES)
SEMESTER-I**

DATA STRUCTURES

Topic	Notes/Strategies/Resources	No. of Lectures
Preliminaries	<ul style="list-style-type: none"> • Introduction <p>In this module students will learn that programs based on efficient algorithms can solve the same problem much faster than programs based on naive algorithms. They will learn how to estimate the running time and memory of an algorithm without even implementing it. Armed with this knowledge, students will be able to compare various algorithms, select the most efficient ones, and finally implement them.</p> <ul style="list-style-type: none"> • Contents <ol style="list-style-type: none"> i. Various data structures ii. Common operations on data structures iii. Algorithm complexity iv. Big O notation v. Time-space tradeoff between algorithms • Notes to be provided • Analysis of the following algorithms to be performed <ol style="list-style-type: none"> i. Addition of two numbers ii. Swapping of two numbers iii. Linear search • Home work assignments • Short test. 	<p>Theory: 4 Assignments/Test: 1 Discussions/ Evaluation: 1 Total: 6</p>
Arrays	<ul style="list-style-type: none"> • Introduction <p>An array is an aggregate data structure that is designed to store a group of objects of the same or different types. Arrays can hold primitives as well as references. The array is the most efficient data structure for storing and accessing a sequence of objects. Here is the list of most important array features students must know (i.e. be able to program)</p> <ol style="list-style-type: none"> i. copying and cloning ii. insertion and deletion iii. searching and sorting <ul style="list-style-type: none"> • Contents <ol style="list-style-type: none"> i. Definition of Arrays ii. Representing arrays in memory 	<p>Theory: 3 Implementation: 4 Assignments/Test: 1 Discussions/ Evaluation: 1 Total: 9</p>

	<ul style="list-style-type: none"> iii. Various operations on linear arrays iv. Multi- dimensional arrays v. Records • Notes will be provided • Implementation of the following algorithms to be performed <ul style="list-style-type: none"> i. Traversing an array ii. Inserting an element in an array iii. Deleting an element from an array iv. Linear Search v. Bubble Sort vi. Binary Search vii. Matrix Addition viii. Matrix Multiplication • Homework and Assignments • Short Test 	
Linked Lists	<ul style="list-style-type: none"> • Introduction <p>One disadvantage of using arrays to store data is that arrays are static structures and therefore cannot be easily extended or reduced to fit the data set. Arrays are also expensive to maintain new insertions and deletions. In this module, another data structure called Linked Lists that addresses some of the limitations of arrays will be discussed.</p> <p>A linked list is a linear data structure where each element is a separate object.</p> <ul style="list-style-type: none"> • Contents <ul style="list-style-type: none"> i. Types of linked lists ii. Representing linked lists in memory iii. Advantage of using linked lists over arrays iv. Various operation on linked lists • Notes to be provided • Implementation of the following algorithms to be performed <ul style="list-style-type: none"> i. Insert an element at the beginning ii. Insert an element at the end iii. Insert an element after the given node iv. Delete an element v. Search an element vi. Implementation of above algorithms in circular linked list. • Home work assignments • Short test. 	<p>Theory: 3 Implementation: 4: Assignments/Test: 1 Discussions/ Evaluation: 1 Total: 9</p>
Stacks	<ul style="list-style-type: none"> • Introduction <p>A stack is a container of objects that are inserted</p>	<p>Theory: 3 Implementation: 2 Assignments/Test:</p>

	<p>and removed according to the last-in first-out (LIFO) principle. In the pushdown stacks only two operations are allowed: push the item into the stack, and pop the item out of the stack. A stack is a limited access data structure - elements can be added and removed from the stack only at the top. push adds an item to the top of the stack, pop removes the item from the top. A helpful analogy is to think of a stack of books; you can remove only the top book, also you can add a new book on the top.</p> <p>A stack is a recursive data structure. Here is a structural definition of a Stack: stack is either empty or it consists of a top and the rest which is a stack</p> <ul style="list-style-type: none"> • Contents <ol style="list-style-type: none"> i. Description of stack structure ii. Implementation of stack using arrays iii. Implementation of stack using linked lists iv. Applications of stacks - converting arithmetic expression from infix notation to polish and their subsequent evaluation v. Quicksort technique to sort an array • Notes will be provided • Implementation of the following algorithms to be performed <ol style="list-style-type: none"> i. Implementation of Push and Pop Operations using arrays ii. Implementation of Push and Pop Operations using Linked Lists iii. Implementation of some Recursive algorithms vii. Implementation of Quick Sort Technique. • Home work assignments • Short test 	<p style="text-align: center;">1 Discussions/ Evaluation: 1 Total: 7</p>
<p>Queues</p>	<ul style="list-style-type: none"> • Introduction <p>A queue is a container of objects (a linear collection) that are inserted and removed according to the first-in first-out (FIFO) principle. An excellent example of a queue is a line of students in the food court. New additions to a line made to the back of the queue, while removal (or serving) happens in the front. In the queue only two operations are allowed enqueue and dequeue. Enqueue means to insert an item into the back of the queue, dequeue means removing the front item. The difference between stacks and queues is in removing. In a stack we remove the item the</p>	<p style="text-align: center;">Theory: 2 Implementation: 2 Assignments/Test: 1 Discussions/ Evaluation: 1 Total: 6</p>

	<p>most recently added; in a queue, we remove the item the least recently added.</p> <ul style="list-style-type: none"> • Contents <ol style="list-style-type: none"> i. Description of queue structure ii. Implementation of queue using arrays iii. Implementation of queue using linked lists iv. Applications of stacks – Operating system simulation. • Notes will be provided • Implementation of the following algorithms to be performed <ol style="list-style-type: none"> iv. Implementation of insertion and deletion Operations using arrays v. Implementation of insertion and deletion Operations using Linked Lists vi. Implementation using circular linked lists. • Home work assignments • Short test 	
<p>Trees</p>	<ul style="list-style-type: none"> • Introduction <p>One of the disadvantages of using an array or linked list to store data is the time necessary to search for an item. Since both the arrays and Linked Lists are linear structures the time required to search a “linear” list is proportional to the size of the data set.</p> <p>In this chapter, we can extend the concept of linked data structure (linked list, stack, queue) to a structure that may have multiple relations among its nodes. Such a structure is called a tree. A tree is a collection of nodes connected by directed (or undirected) edges. A tree is a nonlinear data structure, compared to arrays, linked lists, stacks and queues which are linear data structures. A tree can be empty with no nodes or a tree is a structure consisting of one node called the root and zero or one or more sub-trees.</p> <ul style="list-style-type: none"> • Contents <ol style="list-style-type: none"> i. Description of tree structure and its terminology ii. Binary search tree iii. Implementing binary search tree using linked lists iv. Various operations on binary search trees • Notes will be provided • Implementation of the following algorithms to be performed 	<p>Theory: 3 Implementation: 4 Assignments/Test: 1 Discussions/ Evaluation: 1 Total: 9</p>

	<ul style="list-style-type: none"> i. Implementation of insertion and deletion Operations on Binary Search Tree using Linked Lists. ii. Implementation of Various traversing algorithms. <ul style="list-style-type: none"> • Home work assignments • Short test 	
Heaps	<ul style="list-style-type: none"> • Introduction <p>Heaps are based on the notion of a complete tree, for which we gave an informal definition earlier.</p> <p>Formally: A binary tree is completely full if it is of height, h, and has $2^{h+1}-1$ nodes.</p> <p>A binary tree of height, h, is complete <i>iff</i> it is empty <i>or</i> its left subtree is complete of height $h-1$ and its right subtree is completely full of height $h-2$ <i>or</i> its left subtree is completely full of height $h-1$ and its right subtree is complete of height $h-1$.</p> <p>A complete tree is filled from the left:</p> <ul style="list-style-type: none"> • all the leaves are on <ul style="list-style-type: none"> ○ the same level <i>or</i> ○ two adjacent ones <i>and</i> • all nodes at the lowest level are as far to the left as possible. <ul style="list-style-type: none"> • Contents <ul style="list-style-type: none"> i. Description of heap structure ii. Implementing heaps using arrays iii. Various operations on heaps iv. Applications of heaps – Heapsort technique to sort an array • Notes will be provided • Implementation of the following algorithms to be performed <ul style="list-style-type: none"> i. Implementation of Heap-sort using arrays. ii. Implementation of priority queues • Home work assignments • Short test 	<p>Theory: 2 Implementation: 2 Assignments/Test: 1 Discussions/ Evaluation: 1 Total: 6</p>
Graphs	<ul style="list-style-type: none"> • Introduction <p>In computer science, a graph is an abstract data type that is meant to implement the undirected graph and directed graph concepts from mathematics, specifically the field of graph</p>	<p>Theory: 4 Implementation: 2 Assignments/Test: 1 Discussions/ Evaluation: 1</p>

	<p>theory. A graph data structure consists of a finite (and possibly mutable) set of <i>vertices</i> or <i>nodes</i> or <i>points</i>, together with a set of unordered pairs of these vertices for an undirected graph or a set of ordered pairs for a directed graph. These pairs are known as <i>edges</i>, <i>arcs</i>, or <i>lines</i> for an undirected graph and as <i>arrows</i>, <i>directed edges</i>, <i>directed arcs</i>, or <i>directed lines</i> for a directed graph. The vertices may be part of the graph structure, or may be external entities represented by integer indices or references. A graph data structure may also associate to each edge some <i>edge value</i>, such as a symbolic label or a numeric attribute (cost, capacity, length, etc.)</p> <ul style="list-style-type: none"> • Contents <ol style="list-style-type: none"> i. Description of graph structure ii. Implementing graphs in memory using adjacency matrix or adjacency lists iii. Various graphs traversing algorithms iv. Finding shortest path between two nodes v. Dijkstra's shortest path algorithm vi. Description of heap structure • Notes will be provided • Home work assignments • Short test 	Total: 8
Searching and Sorting	<ul style="list-style-type: none"> • Introduction <p>Sorting refers to arranging data in a particular format. Sorting algorithm specifies the way to arrange data in a particular order. Most common orders are in numerical or lexicographical order. The importance of sorting lies in the fact that data searching can be optimized to a very high level, if data is stored in a sorted manner. Sorting is also used to represent data in more readable formats.</p> <ul style="list-style-type: none"> • Contents <ol style="list-style-type: none"> i. Selection Sort ii. Insertion Sort iii. Merge Sort • Notes will be provided • Implementation of the following algorithms to be performed <ol style="list-style-type: none"> iii. Implementation of Selection sort. iv. Implementation of Insertion sort v. Implementation of merging and merge sort. 	Theory: 1 Implementation: 2 Total: 3

	<ul style="list-style-type: none"> • Home work assignments 	
Hash Tables	<ul style="list-style-type: none"> • Introduction Hash Table is a data structure which stores data in an associative manner. In a hash table, data is stored in an array format, where each data value has its own unique index value. Access of data becomes very fast if we know the index of the desired data. Thus, it becomes a data structure in which insertion and search operations are very fast irrespective of the size of the data. Hash Table uses an array as a storage medium and uses hash technique to generate an index where an element is to be inserted or is to be located from. • Contents <ol style="list-style-type: none"> i. Direct address tables ii. Hash tables iii. Collision resolution by chaining iv. Hash functions v. Open addressing – linear probing, quadratic probing, double hashing • Notes will be provided • Home work assignments • Short test 	<p>Theory:3 Assignments/Tests: 1 Discussions/ Evaluation: 1 Total: 5</p>
Text Books	<ol style="list-style-type: none"> i. Data Structures with C (Schaum's Outline Series) by Seymour Lipschutz ii. Data Structures Using C and C++ by Langsam, Augenstein and Tenenbaum iii. Teach Yourself C++ by Herbert Schildt iv. Let Us C++ by Yashavant P. Kanetkar 	

LESSON PLAN B.SC (INTERNET AND MOBILE TECHNOLOGIES)

SEMESTER-I

CONCEPTS OF COMPUTER SCIENCE

Topic	Notes/ Strategies/Resources	Time
UNIT I		3 weeks (16 Lectures)
Introduction	This Chapter gives basic information related to Operating System	
Body of the lesson	<p>Basic Concepts</p> <ul style="list-style-type: none">• History & Evolution of Operating System• OS as resource manager• Various views of OS <p>Memory Management</p> <ul style="list-style-type: none">• Computer Memory• Hierarchy of memory.• Primary Storage<ol style="list-style-type: none">1. RAM2. ROM• Cache Memory• Virtual memory• RAM vs.ROM• Secondary Storage<ol style="list-style-type: none">1. Magnetic Storage2. Magnetic Tape3. Magnetic Disk4. Floppy Disk5. Hard Disk• Basic Memory management Schemes• Partition memory management• Demand paged memory management <p>Notes: Printed Notes</p>	

	Books: Operating System Concepts Activity: <ul style="list-style-type: none"> • General discussion • Quiz 	
Conclusion	Home Work and Assignment <ul style="list-style-type: none"> • Surf net related to topic • Next day ask students to define • Test 	
UNIT II		3 weeks (16 lectures)
Body of the Lesson	<ul style="list-style-type: none"> • Swapping Process Management: <ul style="list-style-type: none"> • States of Processes • Process scheduling • Race conditions • Deadlock • Banker's algorithm • Precedence graphs • Semaphores • Monitors. Notes: Printed Notes Activity: <ul style="list-style-type: none"> • General discussion 	
Conclusion	Home Work and Assignment <ul style="list-style-type: none"> • Surf net related to topic • Next day ask students to define • Test 	
UNIT III		2 weeks (14 lectures)
	Basic Concepts of Database Management <ul style="list-style-type: none"> • Database • Database System • Why database • Data Independence an architecture for a database system • Levels of the architecture • Mappings • DBA • Client/server architecture • Introduction to Relational db 	

	<p>systems.</p> <p>ER Model</p> <ul style="list-style-type: none"> • Overview • ER diagrams • Database design using ER model. <p>Notes: Printed Notes</p> <p>Books: Database Management System</p> <p>Activity:</p> <ul style="list-style-type: none"> • General discussion • Quiz 	
Conclusion	<p>Home Work and Assignment</p> <ul style="list-style-type: none"> • Surf net related to topic • Next day ask students to define • Test • Latest research in this field 	
UNIT IV		2 weeks (14 Lectures)
	<ul style="list-style-type: none"> • Relational Database Design • Concepts of functional dependencies • Multivalued dependencies <ul style="list-style-type: none"> 1. 1NF 2. 2NF 3. 3NF 4. BCNF 5. Higher Normal Forms <p>Notes: Printed Notes</p> <p>Books: Database Management System</p> <p>Activity:</p> <ul style="list-style-type: none"> • General discussion • Problem Solving 	
Conclusion	<p>Home Work and Assignment</p> <ul style="list-style-type: none"> • Surf net related to topic • Next day ask students to define • Test 	

**LESSON PLAN B.SC (INTERNET AND MOBILE TECHNOLOGIES)
SEMESTER-I**

COMMUNICATION SKILLS

July 2017

Contents	Books	Plan	Activity	Assignment
Reading & Writing Skills	Oxford guide to effective writing and speaking	Formal & Informal letters	G.D's and interactive sessions	Test based on both type of letters

August 2017

Plan	Books	Assignment	Activity	
Unseen passages, Comprehension, note making	Communication Skills in English	Extempore speech competition	paper reading contest	

September 2017

Plan	Activity	Assignment
Notices, Resume Writing	Revision of notices and resume writing	Maintaining of file for all syllabus

October 2017

Plan	Activity	Assignment
Revision of all syllabus and preparation of exams	Mock viva voce	University file for Viva voce

November 2017

Books	Plan	Activity
1 book	Discussion on the questions	Class tests on Reading skills
	University examination preparation	Viva voce

**LESSON PLAN B.SC (INTERNET AND MOBILE TECHNOLOGIES)
SEMESTER-I**

GENERAL PUNJABI

ਆਤਮਅਨਾਤਮ	ਵਿਦਿਆਰਥੀਆਂ ਇਸ ਸਮੇਂ ਸਟਰ ਵਿੱਚ ਇਸ ਪਾਠ ਪੁਸਤਕ ਵਿੱਚੋਂ ਕਵਿਤਾ ਵਾਲਾ ਭਾਗ ਕਰਵਾਇਆ ਜਾਵੇਗਾ 1. ਪ੍ਰੋਮੋਹਣ ਸਿੰਘ	ਸਮਾਂ 1-3 ਦਿਨ
ਗਿਆਨਮਾਲਾ	੧ ਪਹੀਆ ਪ੍ਰਸ਼ਣ	1-3 ਦਿਨ
ਨਿਸ਼ਕਰਸ਼	1. ਸੈਦਾਂਤੇ ਸਬਜਾਂ 2. ਖਾਨਗਾਹੀ ਦੀ ਵਾਬਾਲ ਦੀਏ ਕਵਿਤਾ ਵਾਦਾ ਵਿਸ਼ੈ ਗਤ ਸਰੋਕਾਰਾਂ ਦਾ ਅਧਿਐਨ ਕਰੋ	
ਆਤਮਅਨਾਤਮ	2 ਅਮਿਤਾ ਪ੍ਰੀਤਮ	1-3 ਦਿਨ
ਗਿਆਨਮਾਲਾ	2. ਭਰੂਣ ਹੱਤਿਆ ਦੇ ਦੇਸ਼ ਵਿੱਚ	
ਨਿਸ਼ਕਰਸ਼	੧ ਅਮਿਤਾ ਪ੍ਰੀਤਮ ਦੀਆਂ ਕਵਿਤਾਵਾਂ ਅੰਨ ਦਾ ਤਾਅਤੇ ਅੱਜ ਆਖਾਂ ਵਾਰਿਸ ਸ਼ਾਹ ਨੂੰ ਦੇ ਥੀਮਿਕ ਸਰੋਕਾਰਾਂ ਦਾ ਅਧਿਐਨ ਕਰੋ ੨ ਭਰੂਣ ਹੱਤਿਆ ਦੇ ਦੇਸ਼ ਵਿੱਚ ਨਿਬੰਧ ਦਾ ਸਾਰ ਆਪਣੇ ਸ਼ਬਦਾਂ ਵਿੱਚ ਲਿਖੋ	1-3 ਦਿਨ
ਆਤਮਅਨਾਤਮ	੩ ਸ਼ਿਵ ਕੁਮਾਰ ਬਟਾਲਵੀ	1-3 ਦਿਨ
ਗਿਆਨਮਾਲਾ	੩ ਨਾਰੀ ਸ਼ਕਤੀ	
ਨਿਸ਼ਕਰਸ਼	1 ਲੂਣਾ ਅਤੇ ਜੀ ਚਾਹੇ ਪੰਛੀ ਹੋ ਜਾਵਾਂ ਕਵਿਤਾ ਵਾਂਗ ਦਾ ਵਿਸੇਵ ਸਤੂਤਿ ਆਰਕਰ ਵਾਇਆ ਗਿਆ ੨ ਨਾਰੀ ਸ਼ਕਤੀ ਨਿਬੰਧ ਦਾ ਵਿਸ਼ਾ ਵ ਸਤੂਤਿ ਆਰਕਰ ਵਾਇਆ ਜਾਵੇਗਾ	1-3 ਦਿਨ

ਆਤਮਅਨਾਤਮ	੪ ਸੁਰਜੀਤਪਾਤਰ	1-3ਦਿਨ
ਗਿਆਨਮਾਲਾ	੪ਵਾਤਾਵਰਣੀਪ੍ਰਸ਼ਣਅਤੇਮਨੁੱਖ	
ਨਿਸ਼ਕਰਸ਼	੧ਸੁਰਜੀਤਪਾਤਰਦੀਆਂਕਵਿਤਾਵਾਂਹੁਣਘਰਾਂਨੂੰਪਰਤਣਾਂਅਤੇਸੁੰਨੇਸੁੰਨੇ ਰਾਹਾਂ 'ਤੇਕੋਈਕੋਈਪੈੜਹੈਦਾਨਕਸਲੀਦਿਸ਼ਟੀਤੋਂਮੁਲਾਂਕਣਕੀਰਾਜਾਵੇਗਾਛ ੨ ਵਾਤਾਵਰਣੀਪ੍ਰਸ਼ਣਅਤੇਮਨੁੱਖਨਿਬੰਧਦਾਸਾਰਲਿਖੇਛ	1-3ਦਿਨ
ਆਤਮਅਨਾਤਮ	5ਪਾਸ਼	1-3ਦਿਨ
ਗਿਆਨਮਾਲਾ	੫ਏਡਜ	
ਨਿਸ਼ਕਰਸ਼	੧ ਪਾਸ਼ਦੀਆਂਕਵਿਤਾਵਾਂਇਨਕਾਰਅਤੇਮੇਰੇਤੋਂਆਸਨਾਕਰਿਓਕਵਿਤਾਵਾਂ ਦਾਨਕਸਲੀਲਹਿਰਦੇਪਰਿਪੇਖਵਿੱਚਅਧਿਐਨਛ ੨ਏਡਜਨਿਬੰਧਦਾਸਾਰਆਪਣੇਸ਼ਬਦਾਂਵਿੱਚਲਿਖੇਛ	1-3ਦਿਨ
ਵਿਅਕਰਨ	1 ਪੰਜਾਬੀਧੁਨੀਵਿਉਂਤ	
	ੳ.ਸਵਰਦੀਪਰਿਭਾਸ਼ਾ ਅ. ਸਵਰਦੀਆਂਕਿਸਮਾਂ ੲ. ਉਚਾਰਨਅੰਗ	1-4 ਦਿਨ
ਪੈਰਾਰਚਨਾ	ਪੈਰਾਰਚਨਾਕੀਹੈ? ਚੰਗੀਪੈਰਾਰਚਨਾਦੇਗੁਣ	1-3 ਦਿਨ
ਨਿਸ਼ਕਰਸ਼	1ਸਵਰਉਪਰਨੇਟਲਿਖੇ 2ਵਿਦਿਆਰਥੀਅਤੇਅਨੁਸ਼ਾਸਨਦੇਵਿਸ਼ੇ 'ਤੇਪੈਰਾਰਚਨਾਕਰੋ	
ਵਿਅਕਰਨ	ਸ.ਵਿਅੰਜਨਦੀਪਰਿਭਾਸ਼ਾ ਹਵਿਅੰਜਨਦੀਆਂਕਿਸਮਾਂ ਕਸੁਰਪ੍ਰਣਾਲੀ	1-5 ਦਿਨ
ਅਣਡਿੱਠਾਪੈਰਾ	ਅਣਡਿੱਠਾਪੈਰੇਦਾਅਭਿਆਸਕਰਵਾਇਆਜਾਵੇਗਾਛ	1-3ਦਿਨ
ਨਿਸ਼ਕਰਸ਼	ਧੁਨੀਵਿਉਂਤਉਪਰਨੇਟਲਿਖੇਛ	

<p>ਵਿਆਕਰਨ</p> <p>ਨਿਸ਼ਕਰਸ਼</p>	<p>ਪੰਜਾਬੀਭਾਸ਼ਾਅਤੇਉਪਭਾਸ਼ਾ ਉ.ਭਾਸ਼ਾਅਤੇਉਪਭਾਸ਼ਾਵਿਚਅੰਤਰ ਅ.ਭਾਸ਼ਾਵੰਨਗੀਆਂ ਬਪੰਜਾਬੀਦੀਆਂਉਪਭਾਸ਼ਾਵਾਂਅਤੇਉਹਨਾਂਦੇਪਛਾਣਚਿਨ ਸਟਕਸਾਲੀਭਾਸ਼ਾ</p> <p>ਭਾਸ਼ਾਅਤੇਉਪਭਾਸ਼ਾਦੇਅੰਤਰਨੂੰਸਪਸ਼ੱਟਕਰਦੇਹੋਏਉਪਭਾਸ਼ਾਵਾਂਦੇਪਛਾ ਣਚਿੰਨਨਿਸ਼ਚਿਤਕਰੋ</p>	<p>1-6 ਦਿਨ</p>
<p>ਵਿਆਕਰਨ</p> <p>ਨਿਸ਼ਕਰਸ਼</p>	<p>ਮਾਤਭਾਸ਼ਾ ਉ.ਮਾਤਭਾਸ਼ਾਕੀਹੁੰਦੀਹੈ? ਅ,ਮਾਤਭਾਸ਼ਾਪੜਨੀਕਿਓਜਰੂਰੀਹੈ? ਬ. ਮਾਤਭਾਸ਼ਾਦੇਅਧਿਐਨਦੀਆਂਕੀਸਮੱਸਿਆਵਾਂਹਨ?</p> <p>ਮਾਤਭਾਸ਼ਾਦੇਅਧਿਐਨ 'ਤੇਨੋਟਲਿਖੋ।</p>	<p>1-5ਦਿਨ</p>
<p>ਵਿਆਕਰਨ</p> <p>ਨਿਸ਼ਕਰਸ਼</p>	<p>ਦੂਜੀਭਾਸ਼ਾ ਉ. ਦੂਜੀਭਾਸ਼ਾਕੀਹੁੰਦੀਹੈ? ਅਦੂਜੀਭਾਸ਼ਾਪੜਨੀਕਿਓਜਰੂਰੀਹੈ? ਬਦੂਜੀਭਾਸ਼ਾਦੇਅਧਿਐਨਦੀਆਂਸਮੱਸਿਆਵਾਂ 'ਤੇਨੋਟਲਿਖੋ</p> <p>ਦੂਜੀਭਾਸ਼ਾ'ਤੇਨੋਟਲਿਖੋ</p>	<p>1-4ਦਿਨ</p>

LESSON PLAN B.SC (INTERNET AND MOBILE TECHNOLOGIES)

SEMESTER-I

BASIC PUNJABI

ਜਾਣ - ਪਛਾਣ	ਇਸ ਵਿਚ ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਪੰਜਾਬੀ ਦੀ ਮੁਢਲੀ ਸਿਖਿਆ ਦਿੱਤੀ ਜਾਵੇਗੀ ਤਾਂ ਜੋ ਉਹ ਪੰਜਾਬੀ ਦੀ ਵਰਣਮਾਲਾ ਤੇ ਸ਼ਬਦ-ਬਣਤਰ ਨੂੰ ਚੰਗੀ ਤਰਾਂ ਸਮਝ ਸਕਣ।	ਸਮਾਂ
ਵਿਆਕਰਨ	1. ਵਰਣਮਾਲਾ 2. ਅੱਖਰ-ਕ੍ਰਮ 3. ਪੈਂਤੀ ਅੱਖਰੀ	1-6(ਦਿਨ)
ਨਿਸ਼ਕਰਸ਼	4. ਗੁਰਮੁਖੀ ਲਿਪੀ ਦੀ ਜਾਣ-ਪਛਾਣ 5. ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦਾ ਨਾਮਕਰਨ। ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਨਾਮਕਰਨ ਤੇ ਨੋਟ ਲਿਖਣ ਲਈ ਦਿੱਤਾ ਜਾਵੇਗਾ। ਕਲਾਸ ਵਿੱਚ ਵਰਣਮਾਲਾ ਦਾ ਟੈਸਟ ਲਿਆ ਜਾਵੇਗਾ।	1-3(ਦਿਨ) 1-3(ਦਿਨ)
ਵਿਆਕਰਨ	1. ਲਗਾਂ ਮਾਤਰਾਂ 2. ਸਵਰ ਵਾਹਕ (ੳ, ਅ, ਈ) 3. ਪੈਰ ਵਿੱਚ ਬਿੰਦੀ ਵਾਲੇ ਵਰਣ 4. ਪੈਰ ਵਿੱਚ ਪੈਣ ਵਾਲੇ ਵਰਣ	1-3(ਦਿਨ) 1-3(ਦਿਨ) 1-3(ਦਿਨ)
ਨਿਸ਼ਕਰਸ਼	1. ਗੁਰਮੁਖੀ ਲਿਪੀ ਬਣਤਰ ਤੇ ਤਰਤੀਬ 1. ਗੁਰਮੁਖੀ ਲਿਪੀ ਬਣਤਰ ਤੇ ਤਰਤੀਬ ਉੱਤੇ ਨੋਟ ਲਿਖਣ ਲਈ ਦਿੱਤਾ ਜਾਵੇਗਾ। ਵਰਣਮਾਲਾ ਤੇ ਲਗਾਂ-ਮਾਤਰਾ ਦਾ ਟੈਸਟ ਲਿਆ ਜਾਵੇਗਾ।	1-3(ਦਿਨ)
ਵਿਆਕਰਨ	ਗੁਰਮੁਖੀ ਆਰਥੋਗ੍ਰਾਫੀ 1. ਸਵਰ ਦੀ ਬਣਤਰ 2. ਸਵਰ ਅਤੇ ਲਗਾਂ ਮਾਤਰਾਂ	1-3(ਦਿਨ) 1-3(ਦਿਨ)
ਨਿਸ਼ਕਰਸ਼	3. ਵਿਅੰਜਨ ਦੀ ਬਣਤਰ ਤੇ ਉਚਾਰਨ। ਸਵਰ ਉੱਤੇ ਨੋਟ ਲਿਖਣ ਲਈ ਦਿੱਤਾ ਜਾਵੇਗਾ। ਕਲਾਸ ਵਿੱਚ ਵਿਅੰਜਨ ਦਾ ਟੈਸਟ ਲਿਆ ਜਾਵੇਗਾ।	1-6(ਦਿਨ)

ਵਿਆਕਰਨ	<ol style="list-style-type: none"> 1.ਲ ਅਤੇ ਲ ਦਾਉਚਾਰਣ 2.ਭ,ਧ,ਢ,ਝ,ਞ ਦਾਉਚਾਰਣ 3.ਸ਼ਬਦ ਬਣਤਰ 4.ਸਧਾਰਣ ਸ਼ਬਦ 	<p>1-3(ਦਿਨ)</p> <p>1-3(ਦਿਨ)</p> <p>1-3(ਦਿਨ)</p>
ਨਿਸ਼ਕਰਸ਼	<ol style="list-style-type: none"> 1.ਕੋਸ਼ਗਤਤੇਵਿਆਕਰਣਕਸ਼ਬਦ <p>ਸਧਾਰਣਸ਼ਬਦਉੱਤੇ ਨੋਟ ਲਿਖਣਲਈਦਿੱਤਾਜਾਵੇਗਾ। ਵਿਅੰਜਨਦਾਕਲਾਸਵਿੱਚਟੈਸਟਲਿਆਜਾਵੇਗਾ।</p>	1-3(ਦਿਨ)
ਵਿਆਕਰਨ	<ol style="list-style-type: none"> 1.ਸੰਯੁਕਤ ਸ਼ਬਦ 2.ਸਮਾਸੀ ਸ਼ਬਦ 3.ਦੋਹਰੇ ਤੇਦੋਜਾਤੀਸ਼ਬਦ 	<p>1-3(ਦਿਨ)</p> <p>1-3(ਦਿਨ)</p> <p>1-3(ਦਿਨ)</p>
ਨਿਸ਼ਕਰਸ਼	<ol style="list-style-type: none"> 1.ਮਿਸ਼ਰਤ ਸ਼ਬਦਬਣਤਰ/ਸਿਰਜਨਾ <p>ਸੰਯੁਕਤਤੇਮਿਸ਼ਰਤਸ਼ਬਦਾਂਉੱਤੇ ਨੋਟ ਲਿਖਣਲਈਦਿੱਤਾਜਾਵੇਗਾ। ਪੇਪਰਾਂਦੀਰਵੀਜਨਹੋਵੇਗੀ।</p>	
ਵਿਆਕਰਨ	<ol style="list-style-type: none"> 1.ਪੰਜਾਬੀ ਵਾਕਬਣਤਰ 2.ਕਰਤਾ,ਕਰਮ,ਕਿਰਿਆ 	<p>1-3(ਦਿਨ)</p>
ਨਿਸ਼ਕਰਸ਼	<ol style="list-style-type: none"> 1.ਵਾਕ ਦਾਵਰਗੀਕਰਨ 2.ਵਾਕਾਂ ਦੀਵਰਤੋਂ <p>ਪੰਜਾਬੀਵਾਕਬਣਤਰਉੱਤੇ ਨੋਟ ਲਿਖਣਲਈਦਿੱਤਾਜਾਵੇਗਾ।</p>	<p>1-6(ਦਿਨ)</p> <p>1-3(ਦਿਨ)</p>
ਵਿਆਕਰਨ	<ol style="list-style-type: none"> 1.ਨਿੱਜੀ ਚਿੱਠੀਪੱਤਰ 2.ਦਫਤਰੀ ਤੇਵਪਾਰਕਚਿੱਠੀਪੱਤਰ 3.ਪੈਰਾ ਰਚਨਾ 4.ਸੰਖੇਪ ਰਚਨਾ 	<p>1-3(ਦਿਨ)</p> <p>1-6(ਦਿਨ)</p> <p>1-3(ਦਿਨ)</p>
ਨਿਸ਼ਕਰਸ਼	<ol style="list-style-type: none"> 1ਦਫਤਰੀਤੇਵਪਾਰਕਚਿੱਠੀਪੱਤਰਤੇਪੈਰਾਰਚਨਾਦਾਟੈਸਟਲਿਆਜਾਵੇਗਾ। 	
ਵਿਆਕਰਨ	<ol style="list-style-type: none"> 1.ਅਖਾਣ ਮੁਹਾਵਰੇ 2. ਚਿੱਠੀਪੱਤਰ 3.ਪੈਰਾ ਰਚਨਾ 4.ਸੰਖੇਪ ਰਚਨਾ 	<p>1-6(ਦਿਨ)</p> <p>1-3(ਦਿਨ)</p>
ਨਿਸ਼ਕਰਸ਼	<ol style="list-style-type: none"> 1.ਅਖਾਣਮੁਹਾਵਰੇ,ਚਿੱਠੀਪੱਤਰਤੇਪੈਰਾਰਚਨਾਦਾਟੈਸਟਲਿਆਜਾਵੇਗਾ। 2.ਪੇਪਰਾਂ ਦੀਤਿਆਰੀਕਰਵਾਈਜਾਵੇਗੀ। 	

**LESSON PLAN B.SC (INTERNET AND MOBILE TECHNOLOGIES)
SEMESTER – I**

DRUG ABUSE: PROBLEM, MANAGEMENT AND PREVENTION

Topic	Notes/Strategies/ Resources	Time
<p>Definition and meaning of Drug Abuse</p>	<p>Objective</p> <ul style="list-style-type: none"> ➤ To learn about various illegal drugs. ➤ To identify risk factors and protective factors associated with substance abuse (drugs and alcohol). ➤ To discuss what addiction is and the consequences of it. ➤ To determine behaviours that increase well-being and allow students to achieve life goals. <ul style="list-style-type: none"> • Concept and Overview • Historical Perspective of Drug Abuse • Drug Dependence, Drug Addiction, Physical • Psychological Dependence: Drug Tolerance and withdrawal symptoms. <p>References:</p> <ul style="list-style-type: none"> ✓ Ahuja, Ram (2003), Social Problems in India, Rawat Publication, Jaipur. ✓ Extent, Pattern and Trend of Drug Use in India, Ministry of Social Justice and Empowerment, Government of India, 2004 ✓ World Drug Report 2011, United Nations office of Drug and Crime 	<p>15days</p>
<p>Types of Abused Drugs and their Effects</p>	<ul style="list-style-type: none"> • Stimulants: Amphetamines – Bensedrine, Dexedrine, Cocaine. • Depressants: Alcohol Barbiturates: Nembutal, Seconal, Phenobarbital and Rohypnol. • Narcotics: Heroin, Morphine, Oxycodone • Hallucinogens: Cannabis, Marijuana, Hashish, Hash Oil, MDMA, LSD • Steroids <p>References:</p>	<p>20days</p>

	<ul style="list-style-type: none"> ✓ Ahuja, Ram (2003), Social Problems in India, Rawat Publication, Jaipur. ✓ Extent, Pattern and Trend of Drug Use in India, Ministry of Social Justice and Empowerment, Government of India, 2004 ✓ World Drug Report 2011, United Nations office of Drug and Crime 	
<p>Nature and Extent of the Problem</p>	<ul style="list-style-type: none"> • Magnitude or prevalence of the menace of Drug Abuse in India and Punjab • Vulnerable groups by age, gender and economic status • Signs and Symptoms of Drug Abuse: Physical, Academic, Behavioural and Psychological Indicators. <p>References :</p> <ul style="list-style-type: none"> ✓ Ahuja, Ram (2003), Social Problems in India, Rawat Publication, Jaipur. ✓ Extent, Pattern and Trend of Drug Use in India, Ministry of Social Justice and Empowerment, Government of India, 2004 ✓ World Drug Report 2011, United Nations office of Drug and Crime 	<p>20days</p>

**LESSON PLAN B.SC. (INTERNET AND MOBILE TECHNOLOGIES)
SEMESTER-III**

JAVA AND ANDROID

Topic	Notes/Strategies/ Resources	Time
Basics of Java	<ul style="list-style-type: none">• In this week students will learn Java basics like Java flow controls, Java threads, Java packages, inheritance interfaces in Java, class methods and instance methods, polymorphism, public private protected identifiers.✓ From Online Notes given through moodle.	1 week
Java OOPS	<ul style="list-style-type: none">• Java Abstraction• Java encapsulation• Java Inheritance• Java Interfaces• Java Overriding• Java Polymorphism <p>✓ From Online Notes given through moodle.</p>	2 weeks
Android Basics	<ul style="list-style-type: none">• Components of Android• Android API Versions• Android building blocks• Android Activity Life Cycle <p>✓ From Online Notes given through moodle.</p>	1 Week
Location App	<ul style="list-style-type: none">• About GPS• Location APIs• Get current location longitude and latitude.• Get current address from longitude and latitude through Google's GEOCODER. <p>✓ Practical Sessions online notes</p>	7 days

	given to students	
Music App	<ul style="list-style-type: none"> • Using of Internal Storage for Music Files. • Using Media Player Controls • Playing Music on real device <p>✓ Practical Sessions online notes given to students</p>	7 Days
Discussion Based on latest Android Features.	<ul style="list-style-type: none"> • Features of Android Oreo discussed with the students and also discussed how to use these features in our android app. <p>✓ Online Sites for features and implementation.</p>	7 days
Practice Week	<ul style="list-style-type: none"> • Students given some time for practicing their skills on their apps. 	1 week
Android Database and Data Providers	<ul style="list-style-type: none"> • SQLite Database and its implementation in android. • Getting data from user mobile using content providers. 	2 weeks
OpenGL in Android	<ul style="list-style-type: none"> • Introduction to OpenGL graphics. • Use OpenGL graphics in apps. • 3d terminology • Programs based on OpenGL • Implement OpenGL in app <p>✓ Online Notes.</p>	20 Days
Android Widget	<ul style="list-style-type: none"> • Creating widgets in android application interface. 	1 week

**LESSON PLAN B.SC (INTERNET AND MOBILE TECHNOLOGIES)
SEMESTER-III**

OPEN SOURCE TECHNOLOGIES

TOPIC	NOTES\STRATEGIES\RESOURCES	TIME
UNIT-1		3 Weeks (18 lectures)
INTRODUCTION	This Unit provides the introduction of open source technologies and why we need them along with basic knowledge of installation and commands of Linux operating system.	
BODY OF THE LESSON	<p>Contents:</p> <ul style="list-style-type: none"> • History and Emergence of Open Source Software, • Community Building, • Open Standards, • Open Source Licenses • Introduction to Linux/Open Source, • Linux Installation Process, • Navigating the Linux System, • Linux Desktop Environment, • File Management, • Working with Removable Drives • Configuring Printing, • Web Browsing, • Email Applications, • Multimedia, • File/Directory Manipulation, Commands, • Basic System Maintenance. <p>Resources:</p> <ol style="list-style-type: none"> 1. Presentations 2. Notes made in Word files 3. Notes created in pdf files 4. E-books. <p>https://www.tutorialspoint.com/operating_system/pdf/os_linux.pdf</p> <p>http://linux-training.be/linuxfun.pdf</p> <p>http://www.usm.uni-muenchen.de/people/puls/lessons/intro_general/Linux/Linux_for_beginners.pdf</p> <p>https://www.sics.se/~amir/files/download/os-lab/linux1.pdf</p> <p>http://www.cmb1.uga.edu/downloads/teaching/C2008/LinuxBasics.pdf</p> <p>http://www.tldp.org/LDP/intro-linux/intro-linux.pdf</p>	

	<p>Books:</p> <ol style="list-style-type: none"> 1. Linux: The Complete Reference 6th Edition Authored By: Richard Petersen Publisher: Tata McGraw - Hill Education (2007) 2. Joomla! Explained: Your Step-by-Step Guide 1st Edition Author: Stephen Burge Publisher: Pearson Education (2011) 3. Joomla Bible Author: Ric Shreves, Publisher: Wiley India Pvt. Ltd. (2011) 4. Drupal 7 Bible, Author: Ric Shreves, Brice Dunwoodie, Publisher: Wiley India Pvt. Ltd. (2011) 5. Web Component Development With Zope 3, 2nd Edition 2nd Rev. and Enlarged Ed. Edition Author: Philipp Von Weitershausen Publisher: Springer (2007) <p>Activity:</p> <ol style="list-style-type: none"> 1. Create installation Disk and install Linux 2. Use of basic commands 	
CONCLUSION	<ol style="list-style-type: none"> 1. Test 2. Create a list of basic commands 	
TOPIC	NOTES\STRATEGIES\RESOURCES	TIME
UNIT-2		3 Weeks (18 lectures)
INTRODUCTION	This Unit deals with system administration using Linux operating system to create users and manage the processes and installation of applications.	
BODY OF THE LESSON	<p>Contents:</p> <ul style="list-style-type: none"> • Linux System Administration • Overview, • Linux Boot up, • Remote Connectivity, • Root control, • Emergency Procedures, • File System Structure, • Managing your users, • Process Management, • Automation/Simplification of task through scripting, • installing applications <p>Resources:</p> <ol style="list-style-type: none"> 1. Presentations 	

2. Notes made in Word files
3. Notes created in pdf files
4. E-books.
 - [https://access.redhat.com/documentation/en-US/Red Hat Enterprise Linux/7/pdf/System Administrators Guide/Red Hat Enterprise Linux-7-System Administrators Guide-en-US.pdf](https://access.redhat.com/documentation/en-US/Red_Hat_Enterprise_Linux/7/pdf/System_Administrators_Guide/Red_Hat_Enterprise_Linux-7-System_Administrators_Guide-en-US.pdf)
 - <http://www.tldp.org/LDP/sag/sag.pdf>
 - <http://linux-training.be/linuxsys.pdf>
 - <http://www.nongnu.org/lpi-manuals/manual/pdf/GNU-FDL-OO-LPI-201-0.1.pdf>
 - https://www.vmware.com/pdf/vi3_301_201_admin_guide.pdf

- https://www.tutorialspoint.com/operating_system/pdf/os_linux.pdf
- <http://linux-training.be/linuxfun.pdf>
- http://www.usm.uni-muenchen.de/people/puls/lessons/intro_general/Linux/Linux_for_beginners.pdf
- <https://www.sics.se/~amir/files/download/os-lab/linux1.pdf>
- <http://www.cmb1.uga.edu/downloads/teaching/C2008/LinuxBasics.pdf>
- <http://www.tldp.org/LDP/intro-linux/intro-linux.pdf>

Books:

1. Linux: The Complete Reference 6th Edition Authored By: Richard Petersen
Publisher: Tata McGraw - Hill Education (2007)
2. Joomla! Explained: Your Step-by-Step Guide 1st Edition
Author: Stephen Burge
Publisher: Pearson Education (2011)
3. Joomla Bible Author: Ric Shreves, Publisher: Wiley India Pvt. Ltd. (2011)
4. Drupal 7 Bible, Author: Ric Shreves, Brice Dunwoodie, Publisher: Wiley India Pvt. Ltd. (2011)
5. Web Component Development With Zope 3, 2nd Edition 2nd Rev. and Enlarged Ed.
Edition Author: Philipp Von Weitershausen Publisher: Springer (2007)

Activity:

1. Create multiple user
2. Run multiprocess in multi user environment

CONCLUSION	<ol style="list-style-type: none"> 1. Test 2. Assignment on process management in Ubuntu 17 	
TOPIC	NOTES\STRATEGIES\RESOURCES	TIME
UNIT-3		3 Weeks (18 lectures)
INTRODUCTION	This Unit deals with installation of web and FTP server installation, their configuration and tuning of these servers. It also covers the basics of Content management system.	
BODY OF THE LESSON	<p>Contents:</p> <ul style="list-style-type: none"> • Overview of web Server, • System Specifications for Web and FTP Server Installation procedures, • Configuration settings, • Start/Stop the servers, • testing the servers, • track of logs, • Performance • Tuning of servers. • Apache HTTP Server and its flavors. • WAMP server (Windows, Apache) • OSS for CMS: MediaWiki, Joomla, Drupal, Zope. • Wiki Hosting Services, • Using Wiki Technologies in libraries for designing subject based encyclopedias, subject directory/portal and so on. • Installation of Joomla, Customization of Joomla, Use of Joomla. <p>Resources:</p> <ol style="list-style-type: none"> 1. Presentations 2. Notes made in Word files 3. Notes created in pdf files 4. E-books. <p> http://linux-training.be/linuxsrv.pdf https://help.ubuntu.com/lts/serverguide/serverguide.pdf https://www.sans.org/reading-room/whitepapers/linux/step-step-installation-secure-linux-web-dns-mail-server-1372 http://people.ds.cam.ac.uk/jw35/courses/apache/course.pdf https://sites.duke.edu/workblog/files/2014/12/www.dedoimedo.com-apache-web-server-lm.pdf </p>	

	<p>https://www.infosec.gov.hk/english/technical/files/web.pdf</p> <p>https://www.tutorialspoint.com/operating_system/pdf/os_linux.pdf</p> <p>http://linux-training.be/linuxfun.pdf</p> <p>http://www.usm.uni-muenchen.de/people/puls/lessons/intro_general/Linux/Linux_for_beginners.pdf</p> <p>https://www.sics.se/~amir/files/download/os-lab/linux1.pdf</p> <p>http://www.cmbi.uga.edu/downloads/teaching/C2008/LinuxBasics.pdf</p> <p>http://www.tldp.org/LDP/intro-linux/intro-linux.pdf</p> <p>Books:</p> <ol style="list-style-type: none"> 1. Linux: The Complete Reference 6th Edition Authored By: Richard Petersen Publisher: Tata McGraw - Hill Education (2007) 2. Joomla! Explained: Your Step-by-Step Guide 1st Edition Author: Stephen Burge Publisher: Pearson Education (2011) 3. Joomla Bible Author: Ric Shreves, Publisher: Wiley India Pvt. Ltd. (2011) 4. Drupal 7 Bible, Author: Ric Shreves, Brice Dunwoodie, Publisher: Wiley India Pvt. Ltd. (2011) 5. Web Component Development With Zope 3, 2nd Edition 2nd Rev. and Enlarged Ed. Edition Author: Philipp Von Weitershausen Publisher: Springer (2007) <p>Activity:</p> <ol style="list-style-type: none"> 1. Install Linux web server 2. Install Apache server and perform start, stop, tuning operations 	
CONCLUSION	<ol style="list-style-type: none"> 1. Test 2. Assignment on Joomla, Drupal and Zope. 	

**LESSON PLAN B.SC. (INTERNET AND MOBILE TECHNOLOGIES)
SEMESTER – III
ADVANCED PHP**

Topic	Notes/Strategies/ Resources	Time
CMS	<ul style="list-style-type: none"> • CMS Introduction • Comparison of different CMS. • What do you mean by CMS? Give comparison and how will you choose right CMS for your project? 	2 Weeks
Blog	<ul style="list-style-type: none"> • Blog introduction • Difference between Blog and Website 	3 Days
Installing WordPress	<ul style="list-style-type: none"> • Creating a Database • Installing WordPress • Installing Themes • WordPress Dashboard • Manually Installing a Theme • Adding Custom Header with Theme Name, Author 	10 Days
Changing Themes	<ul style="list-style-type: none"> • Widgets • Editors • Writing Posts • Adding a Post • Hyperlinks • Categories • Tags • Reading/Writing Settings • Using Categories and Tags • Understanding Comments, Managing and Moderating Comments • Trackbacks and Pingbacks • Making Pages Adding and Deleting a Page • Pasting from Text File • Adding and Managing Media • Customizing the Dashboard's Appearance 	10 Days

	<ul style="list-style-type: none"> • Installing some important plugins • SEO Ultimate Fast Secure Contact Form • Wordpress Backup to dropbox • WP-Polls, WP Survey and Quiz Tool • Subscribe to comments • Share button by lockerzStatpress Visitors • Google XML sitemaps, • Social Login • First Visit Message <p>✓ From Professional WordPress: Design and Development, Brad Williams, David Damstra, Hal Stern.</p> <p>✓ WordPress 3 Complete, April Hodge Silver</p>	
<p>Beginning with CakePHP</p>	<ul style="list-style-type: none"> • What is CakePHP • Understanding Model-View-Controller Basic Principles of CakePHP • CakePHP Structure • A Typical CakePHP Request • CakePHP Folder Structure • CakePHP Conventions • File and ClassnameCoventions • Model and Database Conventions • Controller Conventions • View Conventions <p>✓ From this website link https://book.cakephp.org/3.0/en/tutorials-and-examples/blog/blog.html</p>	<p>15 Days</p>
<p>Developing with CakePHP</p>	<ul style="list-style-type: none"> • Installation of CakePHP • Configuration Controllers • Components • Models • Behaviors • DataSources • Views • Helpers • Scaffolding • Global Constants and Functions • Vendor Packages 	<p>25 Days</p>

	<ul style="list-style-type: none"> • Data Validations • Pagination <p>✓ From this website link https://book.cakephp.org/3.0/en/tutorials-and-examples/blog/blog.html</p>	
Core Components & Helpers	<ul style="list-style-type: none"> • Access Control List • Authentication • Cookies • Email • Authentication • Ajax • Form • HTML • JavaScript • Paginator • Session <p>✓ From this website link https://book.cakephp.org/3.0/en/tutorials-and-examples/blog/blog.html</p>	20 Days
CakePHP Application	<ul style="list-style-type: none"> • Creating the Blog database • Cake Database Configuration • Create a Post Model • Create a Posts Controller • Creating Posts Views • Adding Posts • Data Validation • Deleting Posts • Editing Posts • Routes <p>✓ From this website link https://book.cakephp.org/3.0/en/tutorials-and-examples/blog/blog.html</p> <p>✓ From CakePHP 1.3 Application Development Cookbook, Author: Mariano Lglesias, Publisher: Packt (2011)</p> <p>✓ Beginning CakePHP: From Novice to Professional 1st Edition, Author: David Golding, Publisher: Apress (2008)</p>	1Month

**LESSON PLAN B.SC. (INTERNET AND MOBILE TECHNOLOGIES)
SEMESTER-III**

ENVIRONMENTAL STUDIES

Topic	Notes/Strategies/ Resources	Time
The Multidisciplinary Nature of Environmental Studies	<ul style="list-style-type: none"> • Students will learn about Definition, scope & its importance. • Need for public awareness ✓ Agarwal, K. C. 2001. Environmental Biology, Nidhi Publications Ltd. Bikaner. ✓ Bharucha, E. 2005. Textbook of Environmental Studies, Universities Press, Hyderabad ✓ 	2 Days
Natural Resources:	<ul style="list-style-type: none"> • Students will learn about Natural resources and associated problems a) Forest Resources: Use of over exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forests and tribal people. b) Water Resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems. c) Mineral Resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies. d) Food Resources: World food problems, change caused by agriculture and overgrazing, effects or modern agriculture, fertilizer-pesticide problem, salinity, case studies. 	15 Days

	<p>e) Energy Resources: Growing of energy needs, renewable and non-renewable energy resources, use of alternate energy sources, case studies.</p> <p>f) Land Recourses: Land as a resource, land degradation, soil erosion and desertification.</p> <ul style="list-style-type: none"> • Role of an individual in conservation of natural resources. • Equitable use of resources for sustainable lifestyles. <ul style="list-style-type: none"> ✓ Agarwal, K. C. 2001. Environmental Biology, Nidhi Publications Ltd. Bikaner. ✓ Down to Earth, Centre for Science and Environment, New Delhi ✓ Sharma, P. D. 2005. Ecology and Environment, Rastogi Publications, Meerut. 	
Ecosystem	<ul style="list-style-type: none"> • Students will learn about Concept of an ecosystem. • Structure and function of an ecosystem. <ul style="list-style-type: none"> • Producers, consumers and decomposers. • Energy flow in the ecosystem. • Ecological succession. • Food chains, food webs and ecological pyramids. • Introduction <ul style="list-style-type: none"> Types characteristic features structure and function of the following ecosystems: <ul style="list-style-type: none"> a. Forest ecosystem b. Grassland ecosystem Bachelor of Computer Applications 	10 Days

	<p>c. Desert ecosystem d. Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)</p> <ul style="list-style-type: none"> ✓ Jadhav, H. & Bhosale, V. M. 1995. Environmental Protection and Laws. Himalaya Pub. ✓ Joseph, K. and Nagendran, R. 2004. Essentials of Environmental Studies, Pearson Education (Singapore) Pte. Ltd., Delhi. 	
<p>Social Issues and Environment</p>	<ul style="list-style-type: none"> • Students will learn about From unsustainable to sustainable development. • Urban problems related to energy. • Water conservation, rain water harvesting, watershed management. • Resettlement and rehabilitation of people; its problems and concerns. Case studies. • Environmental ethics: Issues and possible solutions. • Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case studies. • Wasteland reclamation. • Consumerism and waste products. • Environmental Protection Act: →Air (prevention and Control of Pollution) Act. →Water (prevention and Control of Pollution) Act. →Wildlife Protection Act. →Forest Conservation Act. • Issues involved in enforcement of environmental legislation. • Public awareness. <ul style="list-style-type: none"> ✓ Kaushik, A. & Kaushik, C. P. 2004. Perspective in Environmental Studies, New Age International (P) Ltd, New Delhi. ✓ Miller, T. G. Jr. 2000. Environmental Science, Wadsworth Publishing Co 	<p>15 Days</p>

National Service Scheme	<ul style="list-style-type: none"> • Students will gain knowledge about Introduction and Basic Concepts of NSS: History, philosophy, aims & objectives of NSS; Emblem, flag, motto, song, badge etc Organizational structure roles and responsibilities of various NSS functionaries. • Health, Hygiene & Sanitation: Definition needs and scope of health education Food and Nutrition Safe drinking water water borne diseases and sanitation (Swachh Bharat Abhiyan) National Health Programme Reproductive health ✓ Kaushik, A. & Kaushik, C. P. 2004. Perspective in Environmental Studies, New Age International (P) Ltd, New Delhi. ✓ Miller, T. G. Jr. 2000. Environmental Science, Wadsworth Publishing Co. ✓ Sharma, P. D. 2005. Ecology and Environment, Rastogi Publications, Meerut. 	10 Days
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LESSON PLAN B.SC (INTERNET AND MOBILE TECHNOLOGIES)

SEMESTER-V

SOCIAL NETWORK PROGRAMMING

TOPIC	NOTES\STRATEGIES\RESOURCES	TIME
UNIT-1		3 Weeks (18 lectures)
INTRODUCTION	This Unit provides insight of social networking, social network sites and social network computing	
BODY OF THE LESSON	<p>Contents:</p> <ul style="list-style-type: none"> • Introduction to Social network computing • Social networking • Social networking service • Advantages, Disadvantages • Characteristics • Build applications that integrate with the major social networking platforms: Facebook, • OpenSocial, and Twitter. <p>Resources:</p> <p>http://whatis.techtarget.com/definition/social-networking https://www.shrm.org/resourcesandtools/tools-and-samples/hr-ga/pages/socialnetworkingsitespolicy.aspx http://socialnetworking.lovetoknow.com/Advantages and Disadvantages of Social Networking http://futureofworking.com/10-advantages-and-disadvantages-of-social-networking/ http://www.easymedia.in/8-key-characteristics-social-networking-sites/ https://www.google.co.in/url?sa=t&rct=j&q=&esrc=s&source=web&cd=3&cad=rja&uact=8&ved=0ahUKEwj3qZP_5LfVAhVHNbwKHegcDvwQFggtMAI&url=https%3A%2F%2Fen.wikipedia.org%2Fwiki%2FSocial_networking_service&usg=AFQjCNHq6IhR6m8yPamjTzestdEYewGLtQ OpenSocial: https://en.wikipedia.org/wiki/OpenSocial https://en.wikipedia.org/wiki/OpenSocial</p> <p>Books:</p> <ol style="list-style-type: none"> 1. Developer's Guide to Social Programming, Mark D. Hawker, Pearson Education 2. OpenSocial Network Programming, Lynne Grewe, Wrox Publications <p>Activity:</p>	

	<ol style="list-style-type: none"> 1. Research on latest social media applications 2. Use of Social media in Industry 	
CONCLUSION	<ol style="list-style-type: none"> 1. Test 2. Assignment on building application 3. Make application for Facebook 	

TOPIC	NOTES\STRATEGIES\RESOURCES	TIME
UNIT-2		3 Weeks (18 lectures)
INTRODUCTION	This Unit provides the knowledge of using Facebook platform, Google Friend connect and Twitter to create social media applications	
BODY OF THE LESSON	<p>Contents:</p> <ul style="list-style-type: none"> • Identify the characteristics of engaging social media applications how to use the Facebook platform, • Google Friend Connect, • and the Twitter API to create them. • Receive hands-on experience in developing sample applications end-to-end. • Advanced features of social network computing using • Facebook, • Twitter, • OpenSocial (Google). <p>Resources:</p> <p>https://code.tutsplus.com/tutorials/design-and-code-an-integrated-facebook-app--net-22138</p> <p>https://code.tutsplus.com/tutorials/build-your-first-facebook-app--net-471</p> <p>https://www.lifewire.com/building-facebook-apps-1240565</p> <p>http://www.wikihow.com/Create-a-Facebook-Application</p> <p>https://en.wikipedia.org/wiki/Google_Friend_Connect</p> <p>https://en.wikipedia.org/wiki/Social_networking_service</p> <p>https://en.wikipedia.org/wiki/Social_computing</p> <p>http://hd.media.mit.edu/tech-reports/TR-570.pdf</p> <p>https://www.google.co.in/url?sa=t&rct=j&q=&esrc=s&source=web&cd=5&cad=rja&uact=8&ved=0ahUKEwjVpKDV6bfVAhWCUbwKHa4JBcEQFghCMAQ&url=http%3A%2F%2Fwww.ijarcsms.com%2Fdocs%2Fpaper%2Fvolume3%2Fissue5%2FV3I5-0051.pdf&usq=AFQjCNFJMyz235Ipw-u7dYsevA9kPO2m3A</p> <p>Books:</p>	

	<p>1. Developer's Guide to Social Programming, Mark D. Hawker, Pearson Education</p> <p>2. OpenSocial Network Programming, Lynne Grewe, Wrox Publications</p> <p>Activity:</p> <ol style="list-style-type: none"> 1. Compare platforms and make a report 2. Develop a sample application 	
CONCLUSION	<ol style="list-style-type: none"> 1. Test 2. Extend the previously build application 	

TOPIC	NOTES\STRATEGIES\RESOURCES	TIME
UNIT-3		3 Weeks (18 lectures)
INTRODUCTION	This Unit provides the knowledge of using advanced features of social platforms and to work on coding examples of programming APIs of these platforms.	
BODY OF THE LESSON	<p>Contents:</p> <ul style="list-style-type: none"> • Building integrated applications. • Work on coding examples to explore and experience the Facebook, Twitter, and Open Social programming APIs. • Write applications utilizing Facebook, OpenSocial, and Twitter and connect them in real world scenarios. <p>Resources:</p> <p>Steps to create app in facebook https://premium.wpmudev.org/forums/topic/how-to-make-a-facebook-app-for-your-site?npl=b&utm_expid=3606929-89.qobzZlXrS1uV61bna13Vlw.1&utm_referrer=https%3A%2F%2Fwww.google.co.in</p> <p>How to create like button in html https://developers.facebook.com/docs/plugins/like-button</p> <p>How to create share link of facebook https://developers.facebook.com/docs/plugins/share-button</p> <p>How to create share link on google+ https://developers.google.com/+web/share/</p> <p>How to create twitter follow button https://dev.twitter.com/web/follow-button</p>	

	<p>https://www.studiopress.com/twitter-follow-button/</p> <p>How to create twitter share button https://dev.twitter.com/web/tweet-button</p> <p>Services in Developer account of google + https://developers.google.com/+/web/</p> <p>How to login using twitter login api http://www.codexworld.com/login-with-twitter-using-php/</p> <p>How to login using google+ login api http://www.codexworld.com/login-with-google-account-using-javascript/</p> <p>Books:</p> <ol style="list-style-type: none"> 1. Developer's Guide to Social Programming, Mark D. Hawker, Pearson Education 2. OpenSocial Network Programming, Lynne Grewe, Wrox Publications <p>Activity:</p> <ol style="list-style-type: none"> 1. Create button and share links on facebook application 2. Connect them in real scenerios 	
CONCLUSION	<ol style="list-style-type: none"> 1. Test 2. Create a full application for Facebook. 	

**LESSON PLAN B.SC. (INTERNET AND MOBILE TECHNOLOGIES)
SEMESTER-V**

MOBILE APPLICATION DEVELOPMENT (IOS)

Topic	Notes/Strategies/ Resources	Time
Introduction to iOS	<ul style="list-style-type: none"> • In this week students will learn iOS Basics, its requirements, its working model, basics of Objective C ✓ From Online Notes given through moodle. 	1 week
Objective C Datatypes	<ul style="list-style-type: none"> • Datatypes • UI Elements • Properties in objective C ✓ From Online Notes given through moodle. 	1 week
Market Opportunities of iOS	<ul style="list-style-type: none"> • Market research of iOS. ✓ From Online Notes given through moodle. 	1 Week
Building iOS Application using objective and testing it on iPhone device	<ul style="list-style-type: none"> • Building basic applications for iOS like touch events, labels, accelerometer, location etc. ✓ Practical Sessions online notes given to students 	2 weeks
Discussion on memory management of mobile applications	<ul style="list-style-type: none"> • Optimizing applications in xcode. • Running applications in live environment. ✓ Practical Sessions online notes given to students 	7 Days
Accessing cloud from iOS applications	<ul style="list-style-type: none"> • iOS Applications using cloud platforms and Apis ✓ Online Sites for features and implementation. 	7 days
Practice Week	<ul style="list-style-type: none"> • Students given some time for practicing their skills on their apps. 	1 week
Discussion on iOS latest features	<ul style="list-style-type: none"> • Discussion on iOS 11 launched by apple and using these features in iOS Applications 	1 week

LESSON PLAN B.SC. (INTERNET AND MOBILE TECHNOLOGIES)

SEMESTER-V

CONTENT MANAGEMENT SYSTEM (CMS)

Topic	Notes/Strategies/ Resources	Time
Introduction to Joomla	<ul style="list-style-type: none">• Content Management System• Joomla Benefits and Joomla Features• How Joomla Works• Installing Joomla• Adding a New Article• Editing the Main Menu• Changing the Frontpage Logo Graphic,• Creating a Custom Poll• Adding Content Joomla Sections and Categories• Creating Your Own Templates• Creating the Hello Joomla Template Files• Adding a Module and a Component to Hello Joomla, Modifying an Existing Template• Creating Templates with Web Editors.• The Difference Between Modules, Components, and Plugins	15 Days
Joomla Managers	<ul style="list-style-type: none">• Template Manager• Language Manager• Article Manager• Section and Category Managers• Frontpage Manager• Media Manager• Trash Manager• Global Configuration Manager• User Manager• Menu Manager• Extension Manager• Module Manager• Plugin Manager	25 Days
Plug-Ins	<ul style="list-style-type: none">• The Most Advanced Extensions• Components and Modules• Module Types• Wrapper (mod_wrapper)	1 Month

	<ul style="list-style-type: none"> • Banners Module and Advertisement Module • Site Components Banners Component • Contacts Component • Newsfeeds Component • Polls Component • Weblinks Component 	
VirtueMart:	<ul style="list-style-type: none"> • Creating a Virtual Store • VirtueMart Control Panel • Global Configuration • Creating Categories • Creating Products • Payment Options • Shopper Groups and User Management • Shipping Module • Order Management. • Creating Extensions 	20 Days
Drupal Introduction	<ul style="list-style-type: none"> • Introduction to Drupal • Advantages of using Drupal • Installing Drupal Installation and configuration 	3 Days
Drupal - Basic Site configuration	<ul style="list-style-type: none"> • Site information • Date and time • Files uploads • Clean-urls • Site maintenance • Input formats • Error reporting • Performance 	1 Week
Drupal menus and themes	<ul style="list-style-type: none"> • Creating Menus & Customization of Menu • Drupal - Themes Concepts • Adjusting theme settings • Switching themes • View Module • Creating Views • Display View in Page and Block Drupal • Template Development • The Elements of a Drupal Template • Modifying an Existing Template • Building a New Template • Introduction to Module Architecture 	35 Days

	<ul style="list-style-type: none"> • Popular Modules in Drupal • Introduction to Drupal Hooks • Creating Our First Module • How to use template.php • Introduction to Creating Forms in Drupal • Introduction to Creating Blocks • Introduction to Administration Module Books 	
<p>Drupal - Content Creating Content</p>	<ul style="list-style-type: none"> • Content Submission • Creating new content types with CCK, CCK add-ons and field types • Taxonomy • Working with media • Images • Audio • Video • Searching for content • Comment • Block Management Drupal – • User Administrator Creating User • User Access Control • Creating Roles <p>References:</p> <ol style="list-style-type: none"> 1. Official Joomla! Book, The, 2nd Edition, By Jennifer Marriott, Elin Waring 2. Using Drupal, Angela Byron <p>Projects: Create websites using Joomla and Drupal</p>	<p>1Month</p>

LESSON PLAN B.SC (INTERNET AND MOBILE TECHNOLOGIES)

SEMESTER- VII

ANDROID APPLICATION DEVELOPMENT

Topic	Notes/Strategies/ Resources	Time
Basics of Java	<ul style="list-style-type: none">• In this week students will learn Java basics like Java flow controls, Java threads, Java packages, inheritance interfaces in Java, class methods and instance methods, polymorphism, public private protected identifiers. <p>✓ From Online Notes given through moodle.</p>	1 week
Java OOPS	<ul style="list-style-type: none">• Java Abstraction• Java encapsulation• Java Inheritance• Java Interfaces• Java Overriding• Java Polymorphism <p>✓ From Online Notes given through moodle.</p>	2 weeks
Android Basics	<ul style="list-style-type: none">• Components of Android• Android API Versions• Android building blocks• Android Activity Life Cycle <p>✓ From Online Notes given through moodle.</p>	1 Week
Location App	<ul style="list-style-type: none">• About GPS• Location APIs• Get current location longitude and latitude.• Get current address from longitude and latitude through Google's GEOCODER. <p>✓ Practical Sessions online notes given to students</p>	7 days

Music App	<ul style="list-style-type: none"> • Using of Internal Storage for Music Files. • Using Media Player Controls • Playing Music on real device <p>✓ Practical Sessions online notes given to students</p>	7 Days
Discussion Based on latest Android Features.	<ul style="list-style-type: none"> • Features of Android Oreo discussed with the students and also discussed how to use these features in our android app. <p>✓ Online Sites for features and implementation.</p>	7 days
Practice Week	<ul style="list-style-type: none"> • Students given some time for practicing their skills on their apps. 	1 week
Android Database and Data Providers	<ul style="list-style-type: none"> • SQLite Database and its implementation in android. • Getting data from user mobile using content providers. 	2 weeks
OpenGL in Android	<ul style="list-style-type: none"> • Introduction to OpenGL graphics. • Use OpenGL graphics in apps. • 3d terminology • Programs based on OpenGL • Implement OpenGL in app <p>✓ Online Notes.</p>	20 Days
Android Widget	<ul style="list-style-type: none"> • Creating widgets in android application interface. 	1 week

LESSON PLAN B.SC (INTERNET AND MOBILE TECHNOLOGIES)

SEMESTER-VII

CLOUD AND MOBILE COMMERCE

Topic	Notes/Strategies/ Resources	Time
Overview of Cloud Computing	<ul style="list-style-type: none">• Students will learn about what is a cloud• Definition of cloud• characteristics of cloud• Why use clouds• How clouds are changing• Driving factors towards cloud <p>➤ Cloud Computing: Concepts, Technology & Architecture by Ricardo Puttini</p>	1 week
Cloud Computing	<ul style="list-style-type: none">• Students will explore about Comparing grid with cloud and other computing systems• workload patterns for the cloud• Big Data introduction• “Big Data”, IT as a service• Concepts of cloud computing,• Cloud computing leverages the Internet• Positioning cloud to a grid infrastructure,• Elasticity and scalability• Virtualization, Characteristics of virtualization,• Benefits of virtualization,• Virtualization in cloud computing• Hypervisors• Multitenancy• Types of tenancy <p>➤ Cloud Computing: Concepts, Technology & Architecture by Ricardo Puttini</p>	10 days

<p>Cloud Computing Concepts</p>	<ul style="list-style-type: none"> • Students will be acquainted with the topic of Application programming interfaces (API), • Billing and metering of services • Economies of scale, Management • Tooling, and automation in cloud computing • Management: Desktops in the cloud • Security <p>➤ Through Presentations</p>	<p>1 week</p>
<p>Cloud Service Delivery</p>	<ul style="list-style-type: none"> • Students will understand about Cloud service • Cloud service model architectures • Infrastructure as a service (IaaS) architecture • Infrastructure as a service (IaaS) details • Platform as a service (PaaS) architecture • Platform as a service (PaaS) details • Platform as a service (PaaS) • Examples of PaaS software • Software as a service (SaaS) architecture • Software as a service (SaaS) details • Examples of SaaS applications • Trade-off in cost to install versus • Common cloud management platform reference architecture • Architecture overview diagram • Common cloud management platform <p>➤ Notes Given</p>	<p>1 week</p>

<p>Cloud Deployment Scenarios</p>	<ul style="list-style-type: none"> • Students will understand about Cloud deployment models • Public clouds • Hybrid clouds, Community • Virtual private clouds • Vertical and special purpose • Migration paths for cloud <p>➤ Notes Given</p>	<p>2Days</p>
<p>Security in Cloud Computing</p>	<ul style="list-style-type: none"> • Students will learn about Selection criteria for cloud deployment • Cloud security reference model • How security gets integrated • Cloud security • Understanding security risks • Principal security dangers to cloud computing • Virtualization • Multitenancy • Internal security breaches • Data corruption or loss • User account and service hijacking • Steps to reduce cloud security breaches <p>➤ Cloud Security and Privacy: An Enterprise Perspective on Risks and Compliance Tim Mather</p>	<p>10 days</p>
<p>Overview of Mobile Technologies</p>	<ul style="list-style-type: none"> • Students will understand the Steps to reduce cloud security breaches • Reducing cloud security • Identity management: • Detection and forensics • Identity management • Detection and Identity management • Benefits of identity • Encryption techniques • Encryption & Encrypting data • Symmetric key encryption, Asymmetric key encryption • Digital signature 	<p>1 week</p>

	<ul style="list-style-type: none"> • What is SSL <p>➤ M-Commerce by Paul Skeldon</p>	
Wireless Communication Systems	<ul style="list-style-type: none"> • Students will explore about the concept of Wireless communication system • Anatomy of a mobile device • Survey of mobile devices • applications of mobile computing • Cellular Networks, • Wireless Networks Standards • 2G/2.5G • 3G • 4G • Geolocation • Global Positioning Systems <p>➤ Notes Given</p>	5 Days
Application Environment	<ul style="list-style-type: none"> • Students will understand about Limited Resource Computing • Memory Management • Low power management • Fault Tolerance • Security issues <p>➤ M-Commerce by Paul Skeldon</p>	2 Days
Future of Mobile Computing	<ul style="list-style-type: none"> • Students will learn about Upcoming technologies Pervasive Computing • Location aware services <p>➤ Notes Given</p>	3 Days

LESSON PLAN B.SC (INTERNET AND MOBILE TECHNOLOGIES)

SEMESTER VII

DATA WAREHOUSING AND DATA MINING

TOPIC	NOTES\STRATEGIES\RESOURCES	TIME
UNIT-1		3 Weeks (18 lectures)
INTRODUCTION	This Unit provides insight of databases, data warehousing, Data mining, OLTP and OLAP.	
BODY OF THE LESSON	<p>Contents:</p> <ul style="list-style-type: none"> • Data Warehousing: • Architecture of a data warehouse; • Differences between Online Transaction Processing (OLTP) and Online Analytical Processing (OLAP) • Data Mining • From Data Warehousing to Data Mining, • Fundamentals of data mining, • Data Mining Functionalities, • Classification of Data Mining systems, • Major issues in Data Mining: • Data preprocessing <p>Resources:</p> <ol style="list-style-type: none"> 1. Presentations 2. Notes made in Word files 3. Notes created in pdf files 4. E-books. <p>Books:</p> <ol style="list-style-type: none"> 1. Data Mining: Concepts and Techniques, Jiawei Han, Micheline Kamber, Morgan Kaufmann; 2nd Edition (2006) 2. Data Mining Introductory and Advanced Topics – Margaret H Dunham, Pearson Education 3. Data Warehousing in the Real World – Sam Anahory & Dennis Murray. Pearson Edn Asia. 4. Data Warehousing Fundamentals – Paulra jPonnaiah Wiley Student Edition. <p>Activity:</p> <ol style="list-style-type: none"> 1. Case study 2. Report on actual use of Data warehousing by Infosys and HCL. 	

CONCLUSION	<ol style="list-style-type: none"> 1. Test 2. Assignment on OLTP and OLAP techniques 	
TOPIC	NOTES\STRATEGIES\RESOURCES	TIME
UNIT-2		3 Weeks (18 lectures)
INTRODUCTION	This Unit discusses the major issues of data mining techniques and discusses descriptive data mining.	
BODY OF THE LESSON	<p>Contents:</p> <ul style="list-style-type: none"> • Descriptive data mining: • characterization and comparison • Data mining techniques: • Association rule analysis • Cluster analysis: • Types of data – • Clustering Methods – • Partitioning methods – • Model based • clustering methods – • outlier analysis <p>Resources:</p> <ol style="list-style-type: none"> 1. Presentations 2. Notes made in Word files 3. Notes created in pdf files 4. E-books. <p>Books:</p> <ol style="list-style-type: none"> 1. Data Mining: Concepts and Techniques, Jiawei Han, Micheline Kamber, Morgan Kaufmann; 2nd Edition (2006) 2. Data Mining Introductory and Advanced Topics – Margaret H Dunham, Pearson Education 3. Data Warehousing in the Real World – Sam Anahory & Dennis Murray. Pearson Edn Asia. 4. Data Warehousing Fundamentals – Paulraj Ponnaiah Wiley Student Edition. <p>Activity:</p> <ol style="list-style-type: none"> 1. Compare Data mining techniques of various companies 2. Real life scenario of an actual implementation 	
CONCLUSION	<ol style="list-style-type: none"> 1. Test 2. Assignment on various data mining 	

	techniques	
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TOPIC	NOTES\STRATEGIES\RESOURCES	TIME
UNIT-3		3 Weeks (18 lectures)
INTRODUCTION	This Unit provides knowledge about usage of data mining in the field of artificial intelligence using Bayesian classification and decision tree methods.	
BODY OF THE LESSON	<p>Contents:</p> <ul style="list-style-type: none"> • Classification – Decision Tree Induction • Bayesian Classification – • Prediction – • Back • Propagation • Applications and trends in data mining, • Case studies in Data Mining applications • Weka Data Analysis and Mining software <p>Resources:</p> <ol style="list-style-type: none"> 1. Presentations 2. Notes made in Word files 3. Notes created in pdf files 4. E-books. <p>http://www.cs.waikato.ac.nz/~ml/weka/</p> <p>Books:</p> <ol style="list-style-type: none"> 1. Data Mining: Concepts and Techniques, Jiawei Han, Micheline Kamber, Morgan Kaufmann; 2nd Edition (2006) 2. Data Mining Introductory and Advanced Topics – Margaret H Dunham, Pearson Education 3. Data Warehousing in the Real World – Sam Anahory & Dennis Murray. Pearson Edn Asia. 4. Data Warehousing Fundamentals – Paulra jPonnaiah Wiley Student Edition. <p>Activity:</p> <ul style="list-style-type: none"> • Case studies in Data mining applications 	
CONCLUSION	<ul style="list-style-type: none"> • Test • Assignment based on case study 	

LESSON PLAN B.SC (INTERNET AND MOBILE TECHNOLOGIES)

SEMESTER-VII

MOBILE COMMERCE

Topic	Notes/Strategies/ Resources	Time
Introduction to Mobile Commerce	<ul style="list-style-type: none">• Students will learn about the basics of mobile commerce• Infrastructure of mobile commerce• Types of mobile commerce services• Technologies of wireless business• Benefits• limitations <p>➤ From M-Commerce by Paul Skeldon</p>	1 week
Introduction to Mobile Commerce	<ul style="list-style-type: none">• Students will understand about Mobile marketing• Mobile advertisement• Advertisement types• Non internet applications in M-commerce• Wireless commerce• Wired commerce• Wireless/wired commerce comparisons <p>➤ M-Commerce: Technologies, Services and business mode by Norman Sadeh</p>	1 week
Mobile Commerce	<ul style="list-style-type: none">• Students will understand about Technology a framework for the study of mobile commerce• I-mode technology• NTT Docomo's I-Mode• Wireless devices for mobile commerce• Working of wireless devices	2 Days

	➤ M-Commerce: Technologies, Services and business mode by Norman Sadeh	
Mobile Commerce	<ul style="list-style-type: none"> • Students will learn about Framework for mobile location based services • Wireless personal area network • Wireless local area network • Mobile communication network • Mobile phone communication • How it works • WAP introduction • WAP working • WML • FDMA and CDMA <p>➤ M-Commerce by Paul Skeldon</p>	10 days
Mobile commerce: Theory and Applications	<ul style="list-style-type: none"> • Students will learn about The ecology of mobile commerce • Wireless application protocol • Mobile Portal <p>➤ Notes Given</p>	2Days
Mobile commerce: Theory and Applications	<ul style="list-style-type: none"> • Students will understand about the concept of Introduction to mobile gaming • Factors influencing the adoption of mobile gaming services • Small business adoption • Small business diffusion • E-Commerce in automotive industry <p>➤ Notes Given</p>	10 days
Theory and Applications	<ul style="list-style-type: none"> • Students will learn about Location based services • Benefits of location based services • Mobile advertising benefits • Strategies • Mobile advertising in building a brand <p>➤ Notes Given</p>	10 Days

Business to business mobile commerce	<ul style="list-style-type: none"> ● Students will understand the concept of M-Commerce benefits for business ● Faster purchases ● Better relation with customers ● Better marketing ● Cost reduction and productivity ● How users benefit from shopping apps ● Email and Messaging ● Field force automation ● Content access ● Inventory <p>➤ Through presentations</p>	5 Days
Business to business mobile commerce	<ul style="list-style-type: none"> ● Students will gain knowledge about Field sales support ● Remote IT support <p>➤ Notes given</p>	2 Days
Business to business mobile commerce	<ul style="list-style-type: none"> ● Students will understand the topic of Customer retention ● B2B services ● financial ● Warehouse automation – security <p>➤ Notes given</p>	3 Days