BHARATHIAR UNIVERSITY: COIMBATORE-641 046
B.Sc. (InformationTechnology&Logsitics)

(For the CPP/COP students admitted from the academic year 2015-16 onwards)

SCHEMEOFEXAMINATION-CBCSPATTERN

Part	Study Components	Course Title	Ins.hrs/ week	Examinations				Credit
				Dur.Hrs	CIA	Marks	Total Mark	
	SemesterI							
I	Language–I		6	3	25	75	100	4
II	English–I		6	3	25	75	100	4
III	Core1:Data Structures and C Programming		5	3	25	75	100	4
III	Allied1:Mathematical Foundations For Computer Science		6	3	25	75	100	4
III	Core Lab1:C Programming Using Data Structures		5	3	40	60	100	4
IV	Environmental Studies#		2	3	-	50	50	2
	SemesterII							
I	Language–II		6	3	25	75	100	4
II	English–II		6	3	25	75	100	4
III	Core 2:Object Oriented Programming with C++		5	3	25	75	100	4
III	Core Lab2: Object Oriented Programming With C++		5	3	40	60	100	4
III	Allied 2: Computer Oriented Numerical & Statistical Methods		6	3	25	75	100	4
IV	Value Education–Human Rights #		2	3	-	50	50	2
	SemesterIII							
III	Core3: System Software and Operating System		5	3	25	75	100	4
III	Core4:Java Programming		5	3	25	75	100	4
III	Core Lab3:Programming Lab JAVA		5	3	40	60	100	4
III	Core5:Computer Organisation and Architecture		5	3	25	75	100	4
III	Allied3:Microprocessor and ALP		5	3	25	75	100	4
IV	Skill based Subject 1 – Introduction to Web Design and Applications		3	3	25	75	100	4
IV	Tamil @ / Advanced Tamil # (or) Non-Major Elective- I (Yoga For Human Excellence) # / Women's Rights #/Constitution of India#		2	3	50		50	2

	SemesterIV						
III	Core6:Principles of Data Communications and Networks	4	3	25	75	100	4
	Core7:Client/Server Computing	4	3	25	75	100	4
	Core8:International Business Management	4	3	25	75	100	4
	Core Lab4:Network Lab	5	3	40	60	100	4
	Allied4:Embedded Systems	6	3	25	75	100	4
IV	Skill based Subject 2 – HTML, XML, JAVA Scripts - Lab	5	3	40	60	100	4
IV	Tamil @ / Advanced Tamil # (or) Non-Major Elective- II (General Awareness)#	2	3	50		50	2
	SemesterV						
III	Core9:Fundamentals of Logistics	5	3	25	75	100	4
III	Core10:Introduction to Shipping	5	3	25	75	100	4
III	Core11:Customs Procedure	4	3	25	75	100	4
III	Core12:Warehousing & Inventory Management	4	3	25	75	100	4
III	Core14:Transportation & Distribution Management	4	3	25	75	100	4
III	Core15:Stevedoring / Freight Forwarding & Port Operations	4	3	25	75	100	4
III	Skill based Subject 3 - Liner Trade	4	3	25	75	100	4
III	**SemesterVI**						
III	INTERNSHIP IN LOGISTICS AND SHIPPING COMPANY – QUARTER 1 *					200	8
III	PROJECT WORK – QUARTER 2 *					200	8
	Total					3500	140

@ NoUniversityExaminations.OnlyContinuousInternalAssessment(CIA)
# NoContinuousInternalAssessment(CIA).OnlyUniversityExaminations.
**For Project work/Internship: Report 80% Marks & Viva Voce 20% Marks*

CORE 1 : DATA STRUCTURES AND C PROGRAMMING

Subject Description: This subject deals with the methods of data structures using C programming language.

Goal: To learn about C programming language using data structuralconcepts.

Objective: Onsuccessfulcompletion of this subject the students should have:

- Writing programming ability on data structures dealing with Stacks, Queues, List, Searching and Sorting algorithmsetc.,

UNIT –I:

Programming development methodologies – Programming style –Problem solving techniques: Algorithm, Flowchart, Pseudocode - Structure of a C program – Ccharacter set – Delimiters – Keywords – Identifiers – Constants – Variables – Rules for definingvariables – Data types – Declaring and initializing variables – Type conversion.Operators and Expressions – Formatted and Unformatted I/O functions –Decision statements – Loop controlstatements.

UNIT –II:

Arrays – String and its standardfunctions.

Pointers–Functions–Preprocessordirectives:#define,#include,#ifndef,Predefined macros.

UNIT –III:

StructureandUnion:Featuresofstructure,Declarationandinitializationofstructure, Structurewithinstructure,Arrayofstructure,Pointertostructure,Bitfields,Enumerateddata types,Union.

Files: Streams and file types, Steps for file operation, File I/O, Structures read andwrite, other file functions, Command line arguments, I/Oredirection.

UNIT –IV:

Linear data structures: Introduction to data structures – List: Implementations,Traversal, Searchingandretrievinganelement,PredecessorandSuccessor,Insertion,Deletion,Sorting, Merging lists – Stack: Representation, Terms, Operations on stack,Implementation.

Single linked list, Linked list with and without header, Insertion, Deletion, Doublelinked list – Queues: Various positions of queue,Representation

UNITV:

Searching and Sorting – Searching: Linear,Binary.

Sorting – Insertion, Selection, Bubble, Quick, Tree,Heap.

TEXTBOOK:

Ashok N Kamthane, "PROGRAMMING AND DATA STRUCTURES"– Pearson Education, First Indian Print 2004, ISBN81-297-0327-0.

REFERENCEBOOK:

1. E Balagurusamy: Programming in ANSI C, Tata McGraw-Hill,1998.
2. Ellis Horowitz and SartajSahni: Fundamentals of Data Structure, Galgotia Book Source,1999.
3. Data structure using C – Aaron M Tanenbaum, Yedidyehlangsam, Moshe J Augenstein, PHIPub

ALLIED PAPER 1 : MATHEMATICAL FOUNDATIONS FOR COMPUTER SCIENCE

SubjectDescription:

This subject deals with mathematical concepts like matrices, numerical analysisand statistical methods for computer science andapplications

Goal:

To learn about the mathematical structures for computerapplications.

Objective:

On successful completion of this subject the students should have:

- Understanding the concepts ofmathematics
- Learning applications of statistical and numerical methods forcomputer science

UnitI

Matrices – Introduction – Determination – Inverse of a matrix – Rank of a Matrix -Eigen valueProblems

UnitII

Set theory-Introduction-Set & its Elements-Set Description-Types ofsets-Venn-Euler Diagrams- Set operations & Laws of set theory-Fundamental products-partitions ofsets-minsets-Algebra of sets and Duality-Inclusion and Exclusionprinciple

UnitIII

Mathematical logic – Introduction- prepositional calculus –Basic logicaloperations-Tautologies-Contradiction-Argument-Method of proof- Predicatecalculus.

UnitIV

Relations–BinaryRelations–Setoperationonrelations-TypesofRelations–Partial order relation – Equivalence relation – Composition of relations – Functions – Types of functions – Invertible functions – Composition offunctions.

UnitV

Graph Theory – Basic terminology – paths, cycle & Connectivity – Sub graphs -Types of graphs – Representation of graphs in compute memory - Trees – Properties of trees –Binary trees – traversing Binary trees – Computer Representation of general trees.

TextBook:

1. Engineering Mathematics Volume II – Dr M.K. Venkataraman – NPC (UnitI)
1. Discrete Mathematics – J.K. Sharma Second Edition – 2005 , Macmillan IndiaLtd.

ReferenceBooks:

1. Discrete Mathematics Structures with Applications to computer science - J.P Tremblay R Manohar – McGraw Hill InternationalEdition.
2. Discrete Mathematics – Dr M. K. Venketaramen, DrN.Sridharan,N. Chandarasekaran – The National publishing CompanyChennai.

Core Lab – 1: C PROGRAMMING USING DATA STRUCTURES

1. Write a C program to create two array list of integers. Sort and store the elements ofboth of them in the thirdlist.
2. Write a C program to experiment the operation of STACK using arrayimplementation.
3. Write a C program to create menu drive program to implement QUEUE to performthe following:
   (i)Insertion
   (ii) Deletion
   (iii) Modification
   (iv) Listing of elements usingpointers

4. Write a C program to create LINKED LIST representation of employee records anddo the following operations usingpointers:
   a. To add a new record
   b. To delete an existingrecord
   c. To print the information about anemployee
   d. To find the number of employees in thestructure

5. Write a C program to count the total nodes of the linkedlist.
6. Write a C program to insert an element at the end of the linkedlist.
7. Write a C program to insert an element at the begining ofthe Double linkedlist.
8. Write a C program to display the hash table , which is to be prepared by using theMid-squaremethod.
9. Write a C program to demonstrate Binarysearch.
10. Write a C program to insert nodes into a Binary tree and totransverse inpre-order.
11. Write a C program to arrange a set of numbers in ascending order usingQUICK-SORT.
12. Write a C program to arrange a set of numbers in descending order usingEXCHANGE-SORT.

CORE 2: OBJECT ORIENTED PROGRAMMING WITHC++

SubjectDescription:

This subject deals with the programming concepts of Object OrientedProgramming usingC++.

Goal: To learn about Object Oriented Programmingconcepts.

Objective: Onsuccessfulcompletion of this subject the students should have:

- Writing programming ability on OOPS concepts like Encapsulation,Data abstraction, Inheritance, Polymorphism and Exception handlingetc.,

UNIT – I

Introduction to C++ - Key Concepts of OOP – Advantages – OO Languages – I/O inC++ -C++Declarations-ControlStructures–DecisionMakingStatements–If…Else–Jump– GOTO – Break – Continue – Switch Case Statements – Loops in C++ - For – While– Do…While loops – Functions in C++, In line Functions – FunctionOverloading.

UNIT –II

Class and Objects: Declaring objects –Defining member functions–Static member variables and functions – Array of objects – Friend functions – Overloading member functions– Bit fields and class – Constructor and Destructors – Characteristics – Calling constructor and Destructors – Constructor and Destructor with staticmember.

UNIT –III

Operator Overloading: Overloading unary, Binary operators – Overloading friend functions – Type conversion - Inheritance: Types of inheritance: Single, Multilevel, Multiple, Hierarchical, Hybrid and Multi path inheritance – Virtual Base classes – AbstractClasses.

UNIT –IV

Pointers: Declaration – Pointer to class, object – THIS pointer – Pointer toderived classes and base classes – Arrays – Characteristics – Arrays of classes – Memory models –New and delete operators – Dynamic objects – Binding, Polymorphisms and Virtualfunctions.

UNIT –V

Files: File stream classes – File Modes – Sequential read/write operations – Binary and ASCII files – Random access operation – Templates – Exception handling – Strings –Declaring and initializing string objects – String attributes – Miscellaneous functions.

TEXTBOOKS

Ashok N Kamthane: Object Oriented Programming with ANSI and Turbo C++,Pearson Education Publ.,2003

REFERENCEBOOKS:

1. E. Balagurusamy: Object Oriented Programming with C++, TMH Pub.,1998.
2. Maria Litvin and Gary Litvin: C++ for you++, VikasPubl,2002.
3. John R Hubbard: Programming with C++, TMH Publ. II Edition,2002.
4. BhushanTrivedi , " Programming with Ansi C++ ", Oxford university Press.2007

Core Lab – 2: OBJECT ORIENTED PROGRAMMING WITHC++

1. Create a class to implement the data structure STACK. Writea constructor to initialize the TOP of the stack to 0. Write amember function POP( ) to delete an element . Check for overflowand underflowconditions.

2. Create a class ARITH which consists of a FLOAT and aninteger Variable . Write member ADD( ) , SUB ( ) , MUL ( ) , DIV ( ), MOD ( ) to perform addition , multiplication ,division andmodulus Respectively . Write member functions to get and display values.

3. Create a class MAT has a 2-d matrix and R&C represents therows and columns of the matrix . Overload the operators +,-,* toadd subtract and multiply two matrices. Write member functions toget and display MAT object values.

4. Create a class STRING . Write member function to initialize , getand display strings .Overload the operator + to concatenate two strings, = = to compare two strings and a member function to find the length of thestring.

5. Create a class which consists of EMPLOYEE detail likeeno, ename, dept, basic-salary, grade. Write member functions to get anddisplay them. Derive a class PAY from the above class and write amember function to calculate da, hra, pf depending on the grade andDisplay the Payslip in a neat format using consoleI/O.

6. Create a class SHAPE which consist of two VIRTUALFUNCTIONS Cal_Area( ) and Cal_PERI to calculate AREA and PERIMETERof various figures. Derive three classes SQUARE,RECTANGLE and TRIANGLE fromthe class SHAPE and calculate AREA and PERIMETER ofeach class separatelyand Display theresult.

7. Create two classes which consists of two private variables, onefloat And one integer variables in each class. Write member functions to get and display them. Write FRIEND function common toarguments And the integer and float values of both the objects separatelyand Display theresult.

8. Write a user defined function USERFUN( ) which has the formatting commands like setw( ) , showpoint ,showpos precision( ). Write a program which prints an multiplication table and uses USERFUN( ) for formatting.

9. Write a program to perform Insertion, Deletion and Updation using files.

10. Write a program which takes a file as argument and copies into another file with line numbers using Command LineArguments.

Allied Paper 2: COMPUTER ORIENTED NUMERICAL & STATISTICAL METHODS

SubjectDescription:

This subject deals with various numerical methods and statistical applications for computer science.

Goal: To learnabout the computer basednumericalandstatisticalmethods.

Objective:

On successful completion of this subject the students should have:

- Understanding various concepts of numericalanalysis.
- Learning various applications statistical methods for Computer Science.

UnitI

The Solution of Numerical Algebraic & Transcendental Equations – Bisection method – Newton-Raphson method - The method of false position.

The Solution of Simultaneous Linear Algebraic Equation – Gauss Elimination method– Gauss Jordon Elimination method – Gauss Seidal method of iteration – Gauss – Jacobi method

UnitII

Numerical Differentiation – Newton's Forward Difference formula - Newton's backward difference formula – numerical Integration – Trapezoidal rule - Simpson's One-third rule– Simpson's three – eighths rule.

UnitIII

Interpolation – Newton forward interpolation formula – Newton backward interpolation formula – LaGrange's formula – Numerical solution of ordinary differential equations –Taylor method – Euler method – Range kutta method.

UnitIV

Measures of central tendency – Mean, Median and mode – Relation between mean, median and mode. Dispersion – Range – Mean deviation & standard deviation.

UnitV

Correlation – Karl Pearson`s Coefficient of Correlation–Rank correlation regression– Regression Equations- Difference between correlation &Regression

TextBook:

1. Numerical Methods – P. Kandasamy , K. Thilagavathi, K. Gunavathi. S. & company Ltd. New Delhi Revised Edition 2005 (UNIT I, II &III)
2. Statistical – R. S. N. Pillai, V. Bagavathi **Sultan Chand and Sons** & CompanyLtd. New Delhi. Reprint 2005. (UNIT IV &V)

ReferenceBook:

1. Computer oriented numerical methods – V. Rajaraman, PHIPub.
2. Numerical methods – E. Balagurusamy Tata MC GrawHill.

Fundamental of Mathematical statistics S C Gupta, V. K. Kapoor **Sultan Chand and Sons**

CORE-3: SYSTEM SOFTWARE & OPERATINGSYSTEM

UNITI	System Software and machine architecture,Assemblers-Basicassembler functions - Machine dependent features, Machine independent features Assembler design options-one pass assemblers-multi pass assemblers. Loader and Linkers: Basic Loader Functions – Machine dependent loader features ,Machine independent loader features, Loader design options -linkage editor - dynamic linking - Bootstraploader.
UNITII	Macroprocessor: Basic macroprocessor functions – Machine independent macroprocessor features - concatenation of macro parameter macro processor design options-recursive macro expansion - general purpose macro processor -macro processing within language translators. Text Editors: Overview of editing process-user interface – editor structure
UNITIII	Machine dependent compiler features - Intermediate form of the program-Machine dependent code optimization-machine independent compiler features-Compiler design options-division into passes-interpreters-p –codecompilers-compiler-compilers.
UNITIV	Introduction:Definition of DOS, Definition Of Process-Process states-Interrupt processing–interrupt classes-Storage Management Real Storage: Real storage management strategies – Contiguous versus Non-contiguous storage allocation – Fixed partition multiprogramming – Variable partition multiprogramming. Virtual Storage: Working sets– Demand paging – pagesize.
UNITV	Processor Management Job and Processor Scheduling: Preemptive Vs Non-preemptive scheduling – Priorities – Dead line scheduling – Device and Information Management Disk Performance Optimization: Operation of moving head diskstorage – Need for disk scheduling – Seek Optimization – File and Database Systems:File System – Functions – Organization – Allocating and freeing space – File descriptor– Access controlmatrix.
Text Book(s)	1. Leland –L-Beck, "System Software-An Introduction to SystemsProgramming", Pearson Education Publishers, ThirdEdition-2003. 2. H. M Deitel , " Operating Systems " , 2nd Edition, PerasonEducation Publication,2003.
Ref. Book(s)	1. Achyut s Godbole , " Operating Systems" , TMH Publications ,2002 2. John J. Donovan , "Systems Programming " , TMH Publications ,1991 3. D.M. Dhamdhrer, "Systems Programming and Operating Systems ", 2nd Revised Edition

Core 4 : JAVAPROGRAMMING

UNITI	Introduction to Object-Oriented Programming – The Java language –Variable Declarations and Arrays – Operators in Java. Control Statements: – Iteration Constructs – Jump Constructs .:Instance variables–Class variables–Instance Methods–Constructors– Class Methods – Declaring Objects – Garbage Collection.
UNITII	Classes and Methods in Detail: Inheritance: Basics of Inheritance – Super Class Variable and Subclass Object – The super reference –Constructor chaining –Abstract Classes andInterfaces: The abstract Classes and Methods – Defining Interface – Implementing Interfaces– Extending Interface – Interface Reference. Exception Handling:
UNIT III	Multithreaded Programming: Concept of Threads – Thread Creation – Thread'sLife Cycle – Thread Scheduling – Synchronization and Deadlock –Inter-thread Communication. Packages and Access Modifiers: Packages – An Introduction – The package Declaration – Theimport Statement – Illustration Package – The Java Language Packages. Handling Strings:
UNIT IV	Input Output Classes: Input and Output Operations – Hierarchy of classes injava.io Package – File class – Input Stream and Output Stream Classes – File Input Stream and Filter Output Stream Classes – Reader and Writer Classes – Random Access File Class- StreamTokenizer.Applets:
UNIT V	Abstract Windowing Toolkit – AWT classes –Control Fundamentals – Component Class –Frame Window in an Applet–Menus.Layout Management and Event Handling:
Text Book(s)	Instructional Software Research and Development (ISRD) Group, "Introduction to Object Oriented Programming through Java", Tata McGraw-HillPublishing Company Limited, New Delhi,2007.
Ref. Book(s)	E.BalaGurusamy, " Programming with JAVA – A Primer", TataMcGraw-Hill Publishing Company Limited, Third Edition,2007 John R. Hubbard, " Schaum's Outline of Programming with Java", TataMcGraw-Hill Publishing Company Limited, Second Edition,2007

CORE 5 :COMPUTER ORGANISATION ANDARCHITECTURE

Subject Description:
This subject deals with fundamentals of digital computers andsystem architecture.

Goal:
To learn about computer fundamentals and itsorganization.

Objective:
Onsuccessfulcompletion of this subject the students should have:

- Knowledge on digitalcircuits
- Interfacing of variouscomponents

UnitI
Number System and Binary Codes: Decimal, Binary, Octal, Hexadecimal – Binary addition, Multiplication, Division – Floating point representation, Complements, BCD, Excess3, Gray Code - **Arithmetic Circuits**: Half adder, Full adder, Parallel binary adder, BCD adder, Half subtractor, Full subtractor, Parallel binary subtractor – Digital Logic: the Basic Gates – NOR, NAND, XOR Gates.

UnitII
Combinational Logic Circuits: Boolean algebra– Karnaugh map – Canonical form 1– Construction and properties– Implicants– Don't care combinations - Product of sum, Sum of products, simplifications. **Sequential circuits**: Flip-Flops : RS, D, JK, T - Multiplexers – Demultiplexers – Decoder– Encoder -Counters.

UnitIII
CENTRAL PROCESSING UNIT: General Register Organization - Control word– Examples of Micro operations - Stack organization - Instruction formats -Addressing modes - Data Transfer and manipulation programcontrol.

UnitIV
Input – Output Organization: Input – output interface – I/O Bus and Interface – I/O Bus Versus Memory Bus – Isolated Versus Memory – Mapped I/O – Example of I/O Interface. Asynchronous data transfer: Strobe Control and Handshaking – Priority Interrupt: Daisy-Chaining Priority, Parallel Priority Interrupt. Direct Memory Access: DMA Controller,DMA Transfer. Input – Output Processor: CPU-IOP Communication.

UnitV
Memory Organization: Memory Hierarchy – Main Memory- Associative memory: Hardware Organization, Match Logic, Read Operation, Write Operation. Cache Memory: Associative, Direct, Set-associative Mapping – Writing Into Cache Initialization. Virtual Memory: Address Space and Memory Space, Address Mapping Using Pages, Associative Memory Page Table, Page Replacement.

TextBooks:

1. Digital Electronics Circuits and Systems, V.K. PURI, TATA McGRAW-HILLPub. Company
2. Computer System Architecture, M. MORRIS MANO,PHI.

Reference Books:

1. ISRD group – Tata McGrawHill.

Core Lab 3: PROGRAMMING LAB JAVA

1.	Program to generate a Pascal Triangle
2.	Program for roots of a Quadratic Equation
3.	Program for merging two sorted arrays
4.	Program for counting letter frequencies in a given string
5.	Program for Multi threading
6.	Program for preparing mark list using inheritance
7.	Program for Multiple inheritance
8.	Program for creating your own package
9.	Program that counts the number of lines, words and characters in a given text file
10.	Program that right-justifies a text file
11.	Program that display a digital clock using applet
12.	Program that generates a human face using applet
13.	Create an applet containing three buttons labeled red, green and blue. Depending on the button pressed, the background color of the applet should change
14.	Create an applet that accepts two numbers in two text fields. Add a button labeled “equals” which when pressed should add the two numbers and display the result in the third text field

Allied Paper 3: MICROPROCESSOR ANDALP

UNITI	Introduction to microprocessors : Embedded Microprocessors – Bit- Slice processors– Microprogramming – RISC and CISC Processors – Scalar and Superscalar Processors – Vector Processors – Array Processors – Symbolic Processors– Digital Signal Processors Intel8086–Pin Description of Intel 8086 – Operating modes of 8086 – Register organization of 8086 – BIU and EU – Interrupts – 8086 based computer system– Addressing Modes of8086
UNITII	8086 Instruction Set – Instruction Groups – Addressing Mode Byte –Segment Register Selection – Segment Override – 8086 Instructions Assembly Language Programs for 8086: Largest Number, Block Move or Relocation – Block Move using REP instruction – Sum of a series – Multi byte Addition
UNITIII	Intel 386 and 486 Microprocessors: Intel 386 and 486 Microprocessor –486DX Architecture – Register Organization of 486 Microprocessor — Operating Modes of Intel 486 – Virtual Memory –Memory Managament Unit – Gates –Interrupts and Exceptions–Addressing Modes of 80486 – Pin Configuration
UNITIV	Input devices – Output devices – Memory and I/O addressing – 8086 Addressing and Address Decoding – Programmable I/O Ports – DMA Data Transfer. Other Microprocessors – PowerPC Microprocessors – Pentium Microprocessors– Pentium Pro microprocessor – Alpha Microprocessor – Cyrix Microprocessor– MIPS Microprocessor – AMD Microprocessor
UNITV	MOTOROLA 68000, MOTOROLA 68020, MOTOROLA 68030,MOTOROLA 68040 Interfacing of A/D Converter and Applications: Introduction – Interfacing of ADC 0808 or ADC 0809 to Intel 8086 – Bipolar to Unipolar Converter–Sample and Hold Circuit, LF 398 – Microprocessor-based Measurement and Control of Physical Quantities
Text Book(s)	Badri Ram, " Advanced Microprocessors and Interfacing", TataMcGraw-Hill Publishing Company Limited, Fourteenth reprint,2007
Ref. Book(s)	A.K. Ray, K.M. Bhurchandi, " Advanced Microprocessors and Peripherals",Tata McGraw-Hill Publishing Company Limited, Second Edition,2007

SKILL BASED SUBJECT 1:
INTRODUCTION TO WEB DESIGN ANDAPPLICATIONS

UNITI	**Fundamentals of Electronic Mail :** Introduction - Email :Advantages and Disadvantages - Userids, Passwords and Email addresses - Message Components - Message Composition - Mailer Features -Email Management - MIME Types .**Browsing and Publishing** ; Introduction – Browser bare bones – Coast – to – Coast surfing – HyberT ext Markup Languages–Web page installation – Web page set up
UNITII	**The internet** : Introduction – internet defined – internet history – the way the internet works – internet congestion – Inter net culture – Business culture and the internet – collaborative computing and the internet . **World Wide Web**: introduction the web defined – web browser details – web writing styles –web presentation outline, design , and management – registering web pages
UNITIII	**Searching the world wide web**: introduction – directories, search engines and metasearch engines – search fundamentals – search strategies – how does a search engine works. **Telnet and FTP**: introduction – telnet and remote login – File transfer – ComputerViruses
UNITIV	**Basic HTML** : introduction – semantic versus syntactic – based style types– headers and footers – lists – tables – debugging . **Advanced HTML:** introduction – frames – html forms – CGI scripts – dynamic documents –html tools – next generation html – cascading style sheets
UNITV	**News groups, Mailing Lists, Chat rooms and MUDs**: introduction – news groups and mailing lists history – mailing list fundamentals – newsgroups and mailing lists availability – chat-rooms – MUDs. **Electronic Publishing:** introduction – electronic publishing advantages and disadvantages –project Gutenberg and on-line books–electronic journals, magazines and news papers –
Text Book(s)	Raymond Greenlaw, Ellen Hepp , Fundamentals of the INTERNET and the World Wide Web, Second Edition , Tata McGRAW –HillEdition,2005
Ref. Book	Developing Web Applications – Ralpb Moseley, M.T. Savaliya; Willay India Pvt. Ltd – Jan 2011 Edition

Core 6: PRINCIPLES OF DATA COMMUNICATIONS AND NETWORKS

UNITI	Introduction to Data Communications and Networking – Information Encoding– Analog and Digital Transmission Methods – Modes of Data Transmission and Multiplexing – Transmission Errors: Detection and Correction
UNITII	Transmission Media : Guided Media, Unguided Media – Network Topologies: Mesh, Star, Tree, Ring, Bus – Switching: Circuit switching, Message switching, Packet switching – Routing Algorithms: Routers and Routing – Factors affecting Routing Algorithms – Routing Algorithms – Approaches to Routing –Network Protocols and OSI Model
UNITIII	Local Area Networks (LAN), Metropolitan Area Networks (MAN) and Wide Area Networks (WAN) – Integrated Services Digital Network (ISDN) –X.25 Protocol – Frame Relay – Asynchronous Transfer Mode(ATM)
UNITIV	Internetworking Concepts, Devices, Internet Basics, History and Architecture– Ways of Accessing the Internet – An Introduction to TCP / IP, IP, ARP,RARP, ICMP
UNITV	TCP: Features of TCP, Relationship between TCP and IP, Ports and Sockets, TCP connections, What makes TCP Reliable, TCP Packet Format – User Datagram Protocol (UDP): UDP Packet, Difference between UDP and TCP –Domain Name System (DNS) – Electronic Mail (Email) – File Transfer Protocol (FTP)– Web Browser Architecture
Text Book(s)	Achyut S. Godbole, " Data Communications and Networks", TataMcGraw-Hill Publishing Company Limited, Ninth reprint,2007
Ref. Book(s)	Behrouz A. Forouzan, " Data Communications and Networking – Second Edition Update " Tata McGraw-Hill Publishing Company Limited, Nineteenth reprint, 2007 Andrew S. Tanenbaum, "Computer Networks", III Edition, Prentice Hall of India,2000

Core 7: CLIENT / SERVERCOMPUTING

UNITI	Client – Server computing – What is Client / Server ? – File servers, Database servers, Transaction servers, Groupware servers, Object servers, Web servers– FAT servers or client / server – Client / Server building blocks
UNITII	Client/Servers and operating systems – The Anatomy of a server program– Needs of Client/Server from an OS – server scalability – Client anatomy– Client and server OS trends – Client OS and Server OS. NOS: Creating the single system image – Remote Procedure Calls (RPC) – Messaging and Queueing: The MOM Middleware
UNITIII	SQL Database Servers: What does SQL do ? – The ISO standards – Whatd oes a database server do ? – Stored procedures, Triggers and Rules. Data warehouses – OLTP (OnLine Transaction Processing) – Decision Support Systems (DSS) – Executive Information System (EIS) – comparing Decision Support and OLTP systems – Production vs Information Databases – The data warehouse
UNITIV	Client/Server Transaction Processing – The ACID properties – Transaction Models – TP monitors – Client / Server groupware – Importance of Groupware –What is Groupware – The components of Groupware. Distributed Objects, CORBA style – Object management architecture – Compound Documents– The compound document framework
UNITV	Web client / server – What is URL? – Shortest HTML tutorial – HTTP – 3tier client / server – HTML web based forms – CGI : The server slide of the web– web security – The internet and the intranets – Compound documents and the object web – The DCOM / OLE Object Web – The CORBA object web.
Text Book(s)	Robert Orfali, Dan Harkey& Jeri Edwards, " The Essential Client /Server Survival Guide", Galgotia Publication Private Limited, Second Edition,2002
Ref. Book	"An Introduction to Client/Server Computing" By Subash Chandra Madav/Sanjay Kumar Singh, New Age Publishers, Dec.2009

Core 8 - INTERNATIONAL BUSINESS MANAGEMENT

Course Objectives:

The aim of this course is to introduce to Introduction to International Business / organizations in terms of effective logistics service to the customers through International trade.

To offer wide knowledge on the fundamentals of International business

UNIT 1- AN OVERVIEW OF INTERNATIONAL TRADE:

Merchandise trade; trade inservices; global sourcing; counter trade; global trade and developing countries theories of international trade - Mercantilism; absolute cost theory; comparative cost theory; opportunity cost theory; factor endowment theory; complementary trade theories-Stopler-samuelson theorem; intra-industry trade; economies of scale; different tastes; technological gaps and product life cycles; availability and non-availability ; trade in intermediate goods; Dutch disease; Transportation cost and international trade – competitive advantage of nations-GAINS FROM TRADE AND TERMS OF TRADE - Gains from trade: terms

UNIT 2 - - TRADE POLICY (FREE TRADE VERSUS PROTECTION:

Arguments for free trade; arguments for protection; demerits of protection; trade barriers; non-tariff barriers; REGIONAL ECONOMICS INTEGRATION (TRADE BLOCS) AND CO-OPERATION - Types of integration; European Union; EU trade; other regional groupings; economics integration of developing countries ; south-south co-operation ; SAARC;SAPTA; indo-Lanka Free Trade agreement; INTERNATIONAL COMMODITY AGREEMENTS, CARTEL AND STATE TRADING - Commodity agreements-quota agreements; buffer stock agreements –cartels; states trading; bilateral/ multilateral contracts BALANCE OF PAYMETS - Components of balance of payments; balance of disequilibrium; correction of balance of payments disequilibrium; financing of BOP deficit INTERNATIONAL MONETARY SYSTEM - Pre-Bretton Woods Periods; Bretton Woods system; managed floating;

UNIT 3 - BALANCE OF PAYMETS :

EMS, ECU and Euro. FOREIGN EXCHANGE MARKET -Meaning nature & functions; determination of exchange rates; purchasing power parity theory; balance of payments theory ;exchange control; exchange rate systems; exchange rate classification ; convertibility of rupee; devalution ; currency exchange risks and their management ;foreign Exchange Management Act (FEMA). EUROCURRENCY MARKET - Meaning and scope; important features of the market; origin and growth; factors that contributed to the growth; supply and demands; an evaluation of the Eurocurrency market. INTERNATIONAL FINANCIAL AND DEVELOPMENT INSTITUTIONS - International Monetary Fund; Special Drawing Rights (SDRs); IMF and international liquidity; World Bank; International Development Association

UNIT 4 - World Bank assistance to India; an evaluation of IMF :

World Bank;International Finance Corporation; Asian Development Bank; UNCTAD; UNIDO; International Trade Centre; WORLD TRADE ORGANIZATION (WTO) - GATT; the Uruguay Round; World Trade Organization; salient features of UR agreement; GATS; TRMs; TRIPs; patents; dispute settlement; anti – dumping measures; an evaluation of UR agreement; UR agreement and development countries; UR agreement and India. International Investments - Types of foreign Investment; significance of foreign investment; limitations and

dangers of foreign capital; factors affecting international investment; growth of FDI; dispersion of foreign investment; portfolio investment; cross- border M & As; foreign investment in India; the New policy;

UNIT 5 - FII investments; Euro / ADR issues, merges and acquisitions;

foreign investmentby Indian Companies MULTINATIONAL CORPORATIONS (MNCs) - Definition and meaning; importance and dominance of MNCs; code of conduct; multinationals in India- GLOBALISATION - Meaning and dimensions; stages of globalization; essential conditions of globalization implications & impact of globalization; globalization of Indian business. FOREING TRADE POLICY AND REGULATION - Foreign trade policy ,2004-09;regulation and development of foreign trade; foreign trade (Development and Regulation) Act; export promotion; EOUs,EPEs and Sezs;international trade financing ;payment terms ;institutional finance for exports ;Exim Bank; export credit risk insurance. - TRADE AND BOP OF INDIA - Highlights of India's Trade performance; determinants of export ;determinants of imports; major exports ;export product-country matrix; major imports; direction of trade ; trends in invisibles and current accounts ;balance of payments ;major problems of India's exports sector.

Text books

Francis Cherunilam - International business management
Hill. C.W International business: competing in global market place.

Refrence Books.

1.Philip R . Cateora International marketing.2.
Charles W.L. Hill – International Business.

CORE LAB 4: NETWORKLAB

1	Write a program to Detect Errors using Vertical Redundancy Check(VRC).
2	Write a program to Detect Errors using Longitudinal Redundancy Check(LRC).
3	Write a program to Detect Errors using Cyclic Redundancy Check(CRC).
4	Write a Socket program to implement Asynchronous Communication.
5	Write a Socket program to implement Isochronous Communication.
6	Write a program to implement Stop & Wait Protocol.
7	Write a program to implement Sliding Window Protocol.
8	Write a Socket Program to Perform file transfer from Server to the Client.
9	Write a program to implement the Shortest Path Routing using Dijkstra algorithm.
10	Write a Program to implement Remote Procedure call under Client /Server Environment

Allied Paper 4: EMBEDDEDSYSTEMS

UNITI	Introduction to Embedded System: An Embedded System – Processor in the System – Other Hardware units – Software embedded into a system – Exemplary embedded system–Embedded system on chip and inVLSI circuit. Processor and Memory organization: Structural units in a processor – Processor selection – Memory devices – Memory selection - Allocation of memory – DMA – Interfacing processor, memories and I/O devices
UNITII	Devices and buses for device networks: I/O devices – Timer and counting devices– Serial communication – Host system. Device drivers and Interrupts servicing mechanism: Device drivers – Parallel port device drivers – Serial port device drivers – Device drivers for IPTD – Interrupt servicing mechanism – Context and the periods for context-switching, dead-line and interrupt latency
UNITIII	Programming concepts and embedded programming in C and C++:Software programming in ALP and C – C program elements – Header and source files and processor directives – Macros and functions – Data types – Data structures– Modifiers – Statements – Loops and pointers – Queues – Stacks – Lists and ordered lists – Embedded programming in C++ - Java – C program compiler and cross compiler – Source code for engineering tools for embedded C/C++ - Optimization of memory needs
UNITIV	Program modeling concepts in single and multi processor systems: Modeling process for software analysis before software implementation – Programming models for event controlled or response time constrained real time programs – Modeling of multiprocessor systems. Software engineering practices: Software algorithm complexity – Software development process life cycle and its models –Software analysis – Software design – Implementation – Testing, Validation and debugging– Software maintenance
UNITV	Inter-process communication and synchronization of processes, tasks and threads: Multiple processor – Problem of sharing data by multiple tasks and routines – Inter process communication. Real time operating systems: Operating system services –I/O subsystem – Network operating systems – Real time and embedded operating systems – Interrupt routine in RTOS environment – RTOS task scheduling– Performance metric in scheduling
Text Book(s)	Raj Kamal, " Embedded Systems – Architecture, Programming and Design",TMH, 2007
Ref. Book	"Designing Embedded Hardware" – by John Cadsoulis, 2nd Edition

SKILL BASED SUBJECT II : HTML, XML, Java Scripts

Students are required to write code snippets, which covers the following objectives

1	Design Simple Web Pages using standard HTML tags like, HEAD, TITLE, BODY
2	Design HTML web pages, which make use of INPUT, META, SCRIPT, FORM, APPLET, BGSOUND, MAP
3	Working with various attributes of standard HTML elements
4	Using Java Script's Window and document objects and their properties and various methods like alert (), evaI (), Parselnt () etc. methods to give the dynamic functionality to HTML web pages
5	Writing Java Script snippet which make use of Java Script's inbulit aswell as user defined objects like navigator, Date Array, Event, Number etc.
6	Write code which does the form validation in various INPUT elements like TextFiled, Text Area, Password, Selection list etc.
7	Writing XML web Documents which make use of XML Declaration, Element Declaration, Attribute Decelaration
8	Usage of Internal DTD, External DTD, Entity Declaration.

FUNDAMENTALS OF LOGISTICS

Course Objectives:

1. The aim of this Lesson is to introduce to Logistics role in Economy / organizations in terms of effective logistics service to the customers.
2. To offer wide knowledge on the fundamentals of logistics business
3. The student is expected to understand the overall logistics services and during this process, he learns to plan / implement / control / cost effectiveness and storage. Thus fulfilling the objectives of Logistics

Learning Outcomes:

1. To explore the fundamental knowledge in logistics operation.
2. Learners will know the impact of logistics in nation's economy
3. To explore the learners with more employment opportunities

Unit I

Logistics Role in the Economy/Organization - Definition of Logistics-Objectives of Logistics-Functions of Logistics. Logistics and Customer Service - Definition of Customer Service-Elements of Customer Service-Phases in Customer Service-Customer Retention

Unit II

Procurement and Outsourcing - Definition of Procurement/Outsourcing-Benefits of Logistics Outsourcing-Critical Issues in Logistics Outsourcing. Inventory Role and Importance of Inventory - Introduction-Role of Inventory-Importance of Inventory-Functions of Inventory-Costs for holding Inventory-Reasons for Carrying Inventories-Inventory Levels-Need for Inventory Control. Inventory Management - Characteristics of Inventory-Need for Inventory and its Control-Importance of Inventory Management in Supply Chain-Types of Inventory-Types of Selective Inventory Control Techniques- Inventory Planning Models-Improvement Inventory Management

Unit III

Materials Management - Objectives of materials management-Materials Planning-Purchasing-Basic Materials of Material Handling-Types of Material Handling Equipments-LASH Transportation - Participants in Transportation Decisions-Modes of Transportation-Factors Influencing Transport Economics-Documents in Transport Decision Making. Warehousing/Distribution - Functions of Warehouse-Benefits of Warehouse-Service-Warehousing Alternatives-Warehouse Site Selection- Factors while initiating Warehouse Operations-Warehouse Management Systems

Unit IV

Packing and Materials Handling - Functions of Packaging-Communication-Packaging Cost-Types of Packaging Material-Unitization-Containerization-Designing a Package-Factors affecting choice of Packaging Materials

Unit V

Global Logistics - Global Supply Chain-Organizing for Global Logistics-Strategic Issues in Global Logistics-Forces driving Globalization-Modes of Transportation in Global Logistics-Barriers to Global Logistics-Markets and Competition. Logistics Strategy - Requirements for an Effective Logistics Strategy - Strategic Logistics Planning – Implementation of Strategy.

Logistics Information Systems - Functions of Logistics Information System (LIS)-LIS Flow-RFID Principles of Logistics Information Organization for Effective Logistics Performance - Centralized and Decentralized Structures-Stages of Functional Aggregation in Organization. Financial Issues in Logistics Performance - Supply Chain Performance Measures-Steps in ABC Costing-Financial Gap Analysis. Integrated Logistics – Need for Integration-Activity Centers in Integrated Logistics. Role of 3PL&4PL - Principles of LIS

Text Books:

1. Fundamentals of Logistics Management (The Irwin/Mcgraw-Hill Series in Marketing), Douglas Lambert, James R Stock, Lisa M. Ellram, McGraw-hill/Irwin, First Edition, 1998.
2. Vinod V. Sople (2009) Logistic Management (2nd Edn.) Pearson Limited.

Reference Books:

1. Logistics Management For International Business: Text And Cases, Sudalaimuthu& S. Anthony Raj, PHI Learning, First Edition, 2009.
2. Fundamentals of Logistics Management, David Grant, Douglas M. Lambert, James R. Stock, Lisa M. Ellram, McGraw Hill Higher Education, 1997.
3. Logistics Management, Ismail Reji, Excel Book, First Edition, 2008.

INTRODUCTION TO SHIPPING

Course Objectives:

1. This course is designed as an introduction to the world of shipping
2. Students will learn will learn:(a) Dealing with ships themselves (b) Shipping markets (c) Will explore the geography of maritime and commercial world (d) Legal aspects of shipping business (e) Commerce concerned with money (f) Basic accounting & corporate structures

Learning Outcomes:

1. To get knowledge in Shipping Markets and its legal aspects.
2. Learners of this course know about the basic shipping operations
3. Learners will be benefitted with the various shipping accounting concepts which enables them to fetch global placements.

Unit I

The reasons for Sea Transport – Introduction – Why Ships – Different Shipping markets – Who Trades - Conclusion. The Supply of Ships – Brief History – Supply of Shipping – Why operate Ships – Protectionism – Ship Registration – Port State Control – Ship Classification

Unit II

The Ship – Tonnage & Load lines – Types of Ships The Dry Cargo Chartering market – Introduction – Chartering – Chartering Negotiations

Unit III

Liners – Introduction – The Development of Tankers & the Tanker Market – Types of tankers – Tanker Charter Parties - Negotiating Charter. Brief History of Liners – Containerization – Conferences & Freight Tariffs – Liner Documentation - Bill of Lading Terms & Conditions

Unit IV

The Practitioners in Shipping Business – The Institute of Chartered Ship Brokers – Ship Sale & Purchase – Ship Management. Maritime Geography – Introduction – Ocean & Seas – Ports – Geography of trade

Unit V

Accounts – Introduction – Accounting – Capital – Credit- management accounting – Cash Flow- Costs – Different types if Companies- Exchange Rates- Company accounts Law of Carriage – Introduction – Fundamentals of English Law – Arbitration – The Contract – Remedies for breach of Contract – TORT- Contracts Relating to the carriage of goods by sea – Liner Bill of Lading – the Hague Visby Rules – Hamburg rules – Agency- Breach of Warranty of Authority – Protection & Indemnity Associations

Text Books:

1. Introduction to Shipping, Institute Of Chartered Shipbrokers, Witherby Seamanship International Ltd, 2nd Revised edition, 2009.
2. Shipping Biography Introduction: Jacob Kamm, Sean Connaughton, Gustaf Erikson, Robert Moran, Sir George Renwick, 1st Baronet, Llc Book, 1994.

Reference Book:

1. Lambert M Surhone, Miriam T. Timpledon, Susan F. Marseken (2010) VdmVerlagDr.Mueller Ag & Co Ka.

CUSTOMS PROCEDURE

Course Objectives:

In the course of basic customs or the role being played by Customs is vital under specialized & mandatory circumstances & within the legal framework to facilitate easy clearance of goods by following appropriate procedures and methods as per their recognized customs procedures.

Learning Outcomes:

1. To gain an in-depth knowledge about various customs procedures pertaining to imports and exports.
2. To understand the various legal proceedings in the Customs Process along with the Port Formalities

Unit-1

Preliminary-Definitions Officers of Customs-Classes-Appointments-Powers of Officers-Entrustments of Functions of Board, Appointment of Customs Ports, Airports, Warehousing Stations-Power to declare places to be Warehousing Stations. Prohibitions on Importation and Exportation of Goods-Power to Prohibit, Power of Central Government to notify goods-Precautions to be taken by persons acquiring notified Goods

Unit-2

Detection of illegally imported goods and Prevention of the disposal there of - Definitions - Power of Central Government to notify goods- Persons possessing notified goods to intimate the place of storage, etc. - Sections 11C, 11E and 11F not to apply to goods in personal use; Prevention or Detection of illegal import of Goods; Power to exempt.

Unit-3

Levy of and exemption From, Customs Duties-Dutiable goods-Duty on Pilfered goods-assessment of Duty-Interest on delayed Funds-Claim for Refund of Duty-Provisional Attachment to protect revenue in certain cases , Indicating Amount of Duty in Price of Goods, For purpose of Refund-Price of goods to indicate amount of duty paid thereon. Advance Rulings-Authority for Advance Rulings-Application for Advance Ruling-Powers of Authority-Procedure of Authority.

Unit-4

Provisions relating to Conveyances Carrying Imported or Exported Goods-Arrival of Vessels and Aircraft in India-Power to board Conveyances-Delivery of export manifest or export report-No Conveyance to leave without written order. Clearance of Imported goods and Exported Goods-Chapter not to apply to baggage and Postal articles-Clearance of goods for home consumption-Clearance of goods for exportation.

Unit-5

Goods in Transit-Transit and Tran shipment of certain goods without payment-Liability of duty on goods transited or transshipped. Warehousing-Appointing of Public Warehouses-Licensing of

Private Warehouses-Clearance of Warehoused goods for home consumption and Exportation-Cancellation and return of Warehousing bond. Drawback-Interest on drawback-Prohibition and regulation of drawback

Text Books:

1 Guide to Customs Procedures 2009:10, GururajBn, Centax Publications Pvt Ltd

2 Customs Law Practice and Procedures,V. S. Datey, Taxmann Allied Services Pvt. Ltd., 7th Edition 2010.

Reference Book:

1. India Customs, Trade Regulations and Procedures Handbook India Customs, Trade Regulations and Procedures Handbook, IBP USA, International Business Publications, USA, Fourth Edition, 2009.

WAREHOUSING & INVENTORY MANAGEMENT

Course Objectives:

1. To understand various storage options available and procedures of managing the inventory in a systematic and orderly manner

Learning Outcomes:

1. To get knowledge in warehousing and inventory management

Unit I

Introduction to Warehouse Concepts Decisions and Operations: Introduction-Definition of Warehouse-Need for Warehousing-Selection of Warehouse-Sequence of Warehousing Decisions-Types of Warehouses-Factors determining location of warehouse-Characteristics of Ideal Warehouse.

Unit II

Factors affecting number of warehouses-Functions of Warehouse-Warehouse Operations.

Unit III

Centralized and Decentralized-Storage Systems-Palletized Storage Systems

Unit IV

Introduction to Inventory Management: Role in Supply Chain-Role in Competitive Strategy-Role of Inventory Control-Functions of Inventory-Types of Inventory-Inventory Cost-Need to hold Inventory- Mechanics of Inventory Control-Selective Inventory Control-Economic Order Quantity-Just In Time System-Warehouse Management System

Unit V

Need of Warehouse Management System-Master Production Scheduling-Material Requirement Planning-Distribution Requirement Planning-Comparison between independent and Dependant Demand Systems-Inventory Records-ABC Inventory Control-Fundamentals of various types of material handling Equipment-Types of Conveyors-Bar Code-Benefits of Bar Coding-Tracking-Inventory Management-Validation-RFID-Principle of RFID-Benefits of RFID-Antenna-Potential Benefits of RFID.

Text Book:

1. Management Guide to Efficient Money Saving Warehousing, Stephen Frey, Gower, 1982.

Reference Books:

1. Warehouse Management and Inventory Control, J P Saxena, Vikas Publication House Pvt Ltd, First Edition,2003.
2. Warehouse Management: Automation And Organisation Of Warehouse and Order Picking Systems [With CDROM], Michael Ten Hompel, Thorsten Schmidt, Springer-verlag, First Edition, 2006.

TRANSPORTATION & DISTRIBUTION MANAGEMENT

Course Objectives:

1. The main aim of this course is to understand role of distributors – designing various distribution channels – networking the role of transportation
2. Will effectively be able to manage transportations – inventory warehousing – various distribution channels – costs and value measures.

Learning Outcomes:

1. To get knowledge in transportation and distribution management.
2. To have a in depth knowledge about the various transportation cost and technologies used in transportation and distribution management.

Unit I

Role of Distribution in Supply Chain – Designing Distribution Channels

Unit II

Distribution Networks – Factors Influencing Distribution Network Decisions – Network Design &Optimization Approach and Techniques

Unit III

Role of Transportation in Supply Chain – Factors influencing Transportation Decisions – Modes of Transportation – Transportation mode Selection Process. Transportation Principles and

Participants – Transportation Participants Transportation Modes, Performance Characteristics and Selection

Unit IV

Transportation Performance, Costs and Value Measures – Factors driving Transportation Costs – Categories of Transportation Costs – Transportation Routing Decisions

Unit V

Transit Operation Software – Benefits of Transportation Software – Advanced Fleet Management System – Inter modal Freight Technology – Transportation Security Initiatives and Role of Technology.

Text Books:

1. Management of Modern City Transportation System, M Mustafa K KDewan, Deep & Deep

Publications Pvt. Ltd., First Edition, 2004.

Reference Books:

1. Transportation Management – Imperatives and Best Practices, S. Jaya Krishna, ICFAI University Press, 2007.
2. Marine Transportation Management, Henry S. Marcus, Auburn House Pub. Co.,1986.

Management of Transportation, Bardi Edward J., Cengage Learning (Thompson), 6th Edition 2006 [International Edition],

STEVEDORING / FREIGHT FORWARDING & PORT OPERATIONS

Course Objectives:

1. It covers Internal Distribution of goods through Multimodal Transportation
2. Various methods and procedures used while loading and discharging cargoes
3. Code of safe practices while handling lifting gears and cargoes.
4. The student should be able to understand the role of Logistics through Multi Modal Transportation, Physical Multi Modal Operations, Air Transportation, Trade routes and cargoes, multi Modal Operators, sale and contact operators.

Learning Outcomes:

1. To get knowledge in multi modal transport operations, stevedoring and freight forwarding.
2. To have a better insight in the intermediary operations in logistics management
3. To get exposed in various conventions related to marketing intermediaries international shipping industry

UNIT-1

Basic Concepts of Cargo Work - Bale Capacity-Grain Capacity-Stowage Factor-Broken Stowage-Load Density-Optional Cargo-Cargo Documents-Mate's Receipt- Precautions before

loading - Dunnage- Separation- Pilfering-Contamination-Handling / Chafing /Crushing-Lashing-Lifting Gear - Safe Working Load-Heavy lift Jumbo Derrick-Precautions when handling heavy lifts-Stuelcken Derricks-Cranes.

UNIT-2

Code of Safe Practice for Solid Bulk Cargoes; Flow Moisture Point-Transportable Moisture Limit-Hazards due to Bulk Cargoes-Structural Hazards and Precautions-General Precautions when holding Bulk Cargoes-Safety Precautions-Properties of Concentrates-Hazards of Concentrates-Precautions when Carrying Concentrates - Some Common Cargoes - Hazards-Precautions-Hold Preparation-Cotton-Rice-Dunnage-Spar Ceiling-Loading and Ventilation-Cement, IMDG Code

Unit-3

Aim-Application-Classification-Packing- Marking/Labeling/Placarding-Documents-Stowage Requirements- Precautions for Loading Dangerous Goods , Paletisation- Containers- Physical Characteristics of Containers-Types of Containers- Refrigerated and Deck Cargoes - Types of Refrigerated Cargoes-Refrigeration Systems-Cargo Operations-Deck Cargoes, Tanker Operation Systems and their Associated Pipelines-Types of Cargo Pipeline Systems-Operational Procedures-Safety Procedures-Gas Detecting Instruments-Inert Gas System-Crude Oil Washing-Pollution.

Unit-4

Some Common Cargoes Hazards-Precautions-Hold Preparation-Cotton-Rice-Dunnage-Spar Ceiling-Loading and Ventilation-Cement, More Cargoes ,Sugar-Rubber-Salt-Pulp & Paper Rolls-Iron and Steel Cargoes, - Principle of Stowing Cargo-Safety of Ship and Crew-Safety of Cargo-Properties of Cargoes Dock Laborers Act,1934 Inspectors-Powers of Inspectors-Obigations of Dock Workers

Unit-5

Introduction – genesis of freight forwarding – understanding concepts of containerization LCL / FCL concepts – various sectors of container markets – Pre stuffing procedures; De stuffing formalities – channelization of return / empty containers – reverse process.

Text Book:

1. Multimodal Transport Rules, Hugh M. Kindred, H. M. Kindred, M. R. Brooks, Kluwer Law International Publisher, 1st Edition, 1997.

Reference Books:

1. Multimodal Transportation of Goods Act, 1993 Along With Allied Rules, Professional Book Publishers.
2. Laws of Carriage of Goods by Sea and Multimodal Transport In India, Dr. K. V. Hariharan, Shroff Pub & Dist. Pvt. Ltd, First Edition, 2006

Containerisation, Multimodal Transport and Infrastructure Development in India, Dr. K. V. Hariharan, Shroff Pub & Dist. Pvt. Ltd, 2007

Skill Based Subject III: LINER TRADE

Course Objectives:

1. This course is intended to offer a good understanding of nature of worldwide line shipping trade including its structure & organization specially related to the container trade.
2. To understand the methods of operations, technology and terminology used. Changes in the liner shipping in the last quarter of the 20th century – containerization and development of liner trade routes

Learning Outcomes:

1. To have a good exposure about the liner trade concepts in International Shipping industry
2. To strengthen the learners knowledge in unitization concept and INCOTERMs used in international business.
3. To have a better understanding about the various documentation procedures in liner trade

UNIT 1:

Definitions of liner trades**;** tramp trades; containerization- Unitization - containerization , liner operations, port organization – Vessel loading and discharging , liner trade routes, The major ports, liner service options - Liner trade – ship types – Tonnages; basic ship layout, types of container ships, Ro-Ro barge carrying vessels, The refrigerated cargo ship conventional (Break bulk) vessels future vessel developments, economy of scale, shipboard handling equipment.

UNIT 2:

Cargoes & cargo equipment –Dangerous goods IMO special goods, cargo handlings other methods of lifting cargo port handling equipment, port terminals; port and terminal management; the role of ships officers - agent.Liner Shipping operations - Management and policy, ship management and operations, independent ship management, insurance, trade of commercial department, accounting, budgeting, freight collection and port disbursements agency duties.

UNIT 3:

Containerization unitization and inter-modalism - Growth in world trade unitization; container dimensions, types of container other container expressions container inventory, owning, leasing meeting the demand for containers tracking the container fleet, container control, FCLS LCLS & ICDS , legal & insurance implications in the container trade.

UNIT 4:

The Bill of Lading and other Documentation -The Bill of Lading UK bill of lading Act 1855 and UK carriage of goods by sea Act 1992, The use of Bill of Lading in liner trades, Bill of Lading documentary credits, Bill of Lading clauses The printed clauses – The evidence of the contract, other forms of Bill of Lading other liner documents, Intl conventions relating to Bill of Lading, paperless trading

UNIT 5:

The Exchange of goods transfer - Transfer of funds from country to country, methods of payments in International trade who are the merchants, International contracts of sale INCO terms; Legal aspects of the liner trades - The carrier insurance the carrier's liability for the cargo the liabilities of the agent, legal aspects of the Bill of Lading, cargo claims general average (GA), security, ISPS code.

Text Books:

1. Ship Operation Research and Development; A Program for Industry, J. Haskell, General Books Publisher, 2009.

Reference Books:

1. Ship Operation Management, Fujita, N.H. Publisher, 1974.
2. Ship Operation Management, Bertrams Publication, 2010.
3. Handbook of Ship Calculations, Construction and Operation, Charles H. Hughes, Wexford College Press, 2008.
4. Ocean Shipping - Elements of Practical Steamship Operation, Robert Edwards Annin, Thompson Press, 2010.

SEMESTER – VI

INTERNSHIP IN LOGISTICS AND SHIPPING COMPANY

PROJECT WORK