List of Courses Focus on Employability/ Entrepreneurship/ Skill Development

Department : *Computer Science & Engineering*

Programme Name : *B.Tech.*

Academic Year : 2017-18

List of Courses Focus on Employability/ Entrepreneurship/Skill Development

Sr. No.	Course Code	Name of the Course
01.	CSATES02	Fundamentals of Computer
02.	CS3TES02	Digital Logic & Design
03.	CS3TPC01	Object Oriented Programming with C++
04.	CS4TPC01	Data Communication and Networks
05.	CS4TPC02	Java Programming
06.	CS4TPC03	Data Structure & Programming Methodology
07.	CS5TPC01	RDBMS
08.	CS5TPC02	Foundation of Computer Science
09.	CS5TOE01	Management Information System
10.	CS5TPE01	VB.Net
11.	CS5TPE02	Parallel Computing
12.	CS6TOE01	Computer Graphics
13.	CS6TPE01	Microprocessor and Interfaces
14.	CS6TPE02	Software Engineering
15.	CS4201	Data Mining
16.	CS4202	GUI Programming (using VB.NET)
17.	CS4203	Artificial Intelligence and Expert Systems
18.	CS4101	Compiler Design
19.	CS4102	Web Technologies
20.	CS4103	Network Security

Scheme and Syllabus

School of Engineering and Technology, Institute of Technology
GURU GHASIDAS VISHWAVIDHALAYA
(A CENTRAL UNIVERSITY ESTABLISHED BY THE CENTRAL UNIVERSITY ORDINANCE 2009, NO: 3 OF 2009)
STUDY & EVALUATION SCHEME
W.E.F. SESSION 2015-2016
B.Tech. I year Choice based Credit System (CBCS), Common to All Branches, Course – A

S. No.	Course No.	SUBJECT	PERIODS			EVALUATION SCHEME			CREDITS
			L	T	P	INTERNAL ASSESSMENT	ESE	SUB-TOTAL	
1.	ENATHS01	Professional Communication in English	3	0	0	40	60	100	3
2.	CHATBS01	Engineering Chemistry	3	0	0	40	60	100	3
3.	MEATES01	Engineering Mechanics	3	1	0	40	60	100	4
4.	CSATES02	Fundamentals of Computer	3	1	0	40	60	100	4
5.	EMATBS02	Engineering Maths - I	3	0	0	40	60	100	3
		Total	15	02	0	200	300	500	17
PRACTICALS									
1.	CHALBS01	Engineering Chemistry Lab	-	-	03	30	20	50	2
2.	MEALES01	Engineering Mechanics Lab	-	-	03	30	20	50	2
3	MEALES03	Engineering Drawing			03	30	20	50	2
		Total			09	90	60	150	06

Total Work Load / week : 26 Total Credit : 23 Total Marks : 650

Computer Science and Engineering
Institute of Technology
Guru Ghasidas Vishwavidyalaya C.G.
CBCS (With Effect from 2016-17)

Sem- III

S.No.	Subject Code	Subjects	Period /week			Evaluation Scheme			Total Credit
			L^1	T^2	P^3	IA	ESE	TOTAL	
1	CS3THS01	Engineering Economics	3	0	0	40	60	100	3
2	CS3TES01	Electronic Devices and Circuits	3	1	0	40	60	100	4
3	CS3TES02	Digital Logic & Design	3	1	0	40	60	100	4
4	CS3TBS01	Engineering Mathematics- III	3	0	0	40	60	100	3
5	CS3TPC01	Object Oriented Programming With C++	3	1	0	40	60	100	4
		PRACTICAL							
1	CS3LPES01	Electronic Devices and Circuit Lab	0	0	3	30	20	50	2
2	CS3LPES02	Digital Logic & Design Lab	0	0	3	30	20	50	2
3	CS3LPPC01	Object Oriented Programming with C++ Lab	0	0	3	30	20	50	2
					Total Credits			650	24

IA- Internal Assessment , ESE – End Semester Examination

Sem- IV

S.No.	Subject Code	Subjects	Period /week			Evaluation Scheme			Total Credit
			L^1	T^2	P^3	IA	ESE	TOTAL	
1	CS4TPC01	Data Communication and Networks	3	1	0	40	60	100	4
2	CS4TPC02	Java Programming	3	1	0	40	60	100	4
3	CS4TPC03	Data Structure & Programming Methodology	3	1	0	40	60	100	4
4		Open Elective - I	3	0	0	40	60	100	3
5		Open Elective - II	3	0	0	40	60	100	3
		PRACTICAL							
1	CS4LPPC01	Data Communication and Networks Lab	0	0	3	30	20	50	2
2	CS4LPPC02	Java Programming Lab	0	0	3	30	20	50	2
3	CS4LPPC03	Data Structure & Programming Methodology Lab	0	0	3	30	20	50	2
					Total Credits			650	24

IA- Internal Assessment , ESE – End Semester Examination

Open Elective Subjects		
S.No.	Subject Code	Subject
01	CS4TOE01	System Software
02	CS4TOE02	Computer Organization & Architecture
03	CS4TOE03	Discrete Mathematics and Fuzzy Techniques
04	CS4TOE04	System Analysis and Design

Semester- V

S N	Subject Code	Subjects	Period /week			Evaluation Scheme			Total Credit
			L[1]	T[2]	P[3]	IA	ESE	TOTAL	
1	CS5TPC01	RDBMS	3	1	0	40	60	100	4
2	CS5TPC02	Foundation of Computer Science	3	1	0	40	60	100	4
3	CS5TPEXX	PE Choice-I Vth Semester	3	1	0	40	60	100	4
4	CS5TPEXX	PE Choice-II Vth Semester	3	1	0	40	60	100	4
5	CS5TOEXX	OE-I Vth Semester	3	0	0	40	60	100	3
		PRACTICAL							
1	CS5LPC01	RDBMS Lab	0	0	3	30	20	50	2
2	CS5LPC02	Advance Programming Lab	0	0	3	30	20	50	2
3	CS5LPR01	Mini Project Lab-I in VB.NET	0	0	3	30	20	50	2
						Total Credits		650	25

IA- Internal Assessment , ESE – End Semester Examination

Open Elective Subjects Vth Semester			Credit	Professional Elective Subject Vth Semester			Credit
SN	Subject Code	Subject		SN	Subject Code	Subject	
1	CS5TOE01	Management Information System	3	1	CS5TPE01	VB.NET	4
2	CS5TOE02	Embedded System	3	2	CS5TPE02	Parallel Computing	4
3	CS5TOE03	Principle of Management	3	3	CS5TPE03	Grid Computing	4
4	CS5TOE04	Computer Oriented Numerical Methods	3	4	CS5TPE04	Mobile Communication	4

Semester- VI

SN	Subject Code	Subjects	Period /week			Evaluation Scheme			Total Credit
			L[1]	T[2]	P[3]	IA	ESE	TOTAL	
1	CS6TPC01	Operating System	3	1	0	40	60	100	4
2	CS6TPC02	Design and Analysis of Algorithm	3	1	0	40	60	100	4
3	CS6TPEXX	PE Choice-I VI th Semester	3	1	0	40	60	100	4
4	CS6TPEXX	PE Choice-II VIth Semester	3	1	0	40	60	100	4
5	CS6TOEXX	OE-I VIth Semester	3	0	0	40	60	100	3
		PRACTICAL							
1	CS6LPC01	Operating System Lab	0	0	3	30	20	50	2
2	CS6LPC02	Design and Analysis of Algorithm Lab	0	0	3	30	20	50	2
3	CS6LPR01	Mini Project Lab	0	0	3	30	20	50	2
						Total Credits		650	25

Open Elective Subjects VI th Semester			Credit	Professional Elective Subject VI th Semester			Credit
SN	Subject Code	Subject		SN	Subject Code	Subject	
1	CS6TOE01	Computer Graphics	3	1	CS6TPE01	Microprocessor and Interfaces	4
2	CS6TOE02	Robotics	3	2	CS6TPE02	Software Engineering	4
3	CS6TOE03	Operation Research	3	3	CS6TPE03	UNIX Operating System	4
4	CS6TOE04	Geo-Informatics and GIS Application	3	4	CS6TPE04	Multimedia System Design	4

Department of Computer Science & Engineering

SEMESTER-V

S.NO	CODE NO.	SUBJECT	PERIODS			EVALUATION SCHEME			CREDITS
			L	T	P	IA	ESE	TOTAL	
1	CS3101	Microprocessor And Interfaces	3	1	-	40	60	100	4
2	CS3102	Operating System	3	1	-	40	60	100	4
3	CS3103	Computer Oriental Numerical Method	3	1	-	40	60	100	4
4	CS3104	Parallel Computing	3	1	-	40	60	100	4
5	CS3105	Formal Language & Automata Theory	3	1	-	40	60	100	4
		PRACTICAL							
1	CS3106	CONM Lab	-	-	3	30	20	50	2
2	CS3107	Operating System Lab	-	-	3	30	20	50	2
3	CS3108	Microprocessor Lab	-	-	3	30	20	50	2
		TOTAL	15	5	9			650	26

IA – Internal Assessment

ESE – End Semester Examination

49

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Department of Computer Science & Engineering

SEMESTER-VI

S.NO.	CODE NO.	SUBJECT	PERIODS			EVALUATION SCHEME			CREDITS
			L	T	P	IA	ESE	TOTAL	
1	CS3201	Advance Programming Through Java	3	1	-	40	60	100	4
2	CS3202	Computer Graphics	3	1	-	40	60	100	4
3	CS3203	Software Engineering	3	1	-	40	60	100	4
4	CS3204	RDBMS	3	1	-	40	60	100	4
5	CS3205	Design And Analysis Of Algorithm	3	1	-	40	60	100	4
	PRACTICAL								
1	CS3206	Computer Graphics Lab	-	-	3	30	20	50	2
2	CS3207	RDBMS Lab	-	-	3	30	20	50	2
3	CS3208	Java Programming Lab	-	-	3	30	20	50	2
		TOTAL	15	5	9			650	26

A- Internal Assessment

SE - End Semester Examination

57

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	Credits	L	T	P
~~ES502~~ CSATES02	4	3	1	0

CSATES02- FUNDAMENTALSOF COMPUTER

Unit I: *Number Systems*

Introduction Decimal Number System , Binary Number System, Conversion of Binary Number to Decimal Number , Conversion of Decimal Number to Binary Number System, Addition of Binary Numbers ,Binary Subtraction , Use of Complements to Represents Negative Numbers , Conversion of Binary Fraction to Decimal Fraction , Conversion of Decimal Fraction to Binary Fraction System, Octal Number System, Hexadecimal Number System, Binary Coded Decimal (BCD Codes), EBCDIC Code, Gray Codes.

Unit II: Central Processing Unit (CPU) & Memory

Introduction, CPU Organization, Addressing Modes, Interrupts & Exceptions , Organization Of Intel-8085 Microprocessor.

Memory: Primary Memory, Secondary Memory, Cache Memory, Virtual Memory, Registers.

Unit III: Introduction to Programming Language

Introduction to Programming Language : Low Level Programming Language, High Level Language, Fourth Generation Language, Introduction to Software, Application Software and System Software, Compiler, Interpreter, Assembler, Device Driver.

Unit IV: Operating Systems

Definition, Functions and Objective, Evolution of Operating System, Batch Processing, SPOOLING, Multiprogramming, Multiprocessing, Time Sharing, Real Time Processing.

Unit V: Algorithm and Flowchart

Introduction to Algorithm and Characteristics, Introduction to Flow Chart: Symbols, Rules of Drawing Flow Chart, Advantage and Limitation of Flow Chart, Decision Tables.

Reference Books:

1) Computer Fundamentals by P.K.Sinha.

2) Computer Fundamental by B.Ram

3) Fundamental of Computers by V.Rajaraman.

4) Fundamental of Computers & Programming with C by A.K.Sharma.

Class: **Bachelor of Technology Third Semester Computer Science and Engineering**
Subject Name: **Digital Logic & Design**
Subject Code: **CS3TES02**

Unit I:

BINARY SYSTEM: Binary Number , Number Base conversion , Octal and Hexadecimal Numbers Complements, Binary Codes Binary Storage and Registers , Binary Logic , Integrated Circuits.

BOOLEAN ALGBRA AND LOGIC GATES:

Basic Definitions, Axiomatic Definition of Boolean algebra. Basic Theorems and Properties of Boolean algebra, Boolean Functions, Canonical and Standard Forms. Other Logic Operations: Digital Logic Gates. IC - Digital Logic Families, NAND, NOR, Ex-OR gates.

Unit II:

BOOLEAN FUNCTIONS: K-map, Two and Three Variable K-Maps, Four Variable K-Map, Five Variable K-Map, Six Variable K-Map, Product of sums(POS) and Sum of Product(SOP) Simplification, NAND and NOR implementation, K-map using Don't Care Conditions, The Tabulation Method.

COMBINATIONAL LOGIC: Introduction, Design procedure Adders, Sub- tractors, Code Conversion, Analysis Equivalence Functions.

Unit III:

COMBINATIONAL LOGIC WITH MSI AND LSI: Introduction Binary Parallel Adder, Decimal, Adder, Magnitude Comparator, Decoders, Multiplexers, Read Only Memory (ROM), Programmable Logic Array (PLA).

Unit IV:

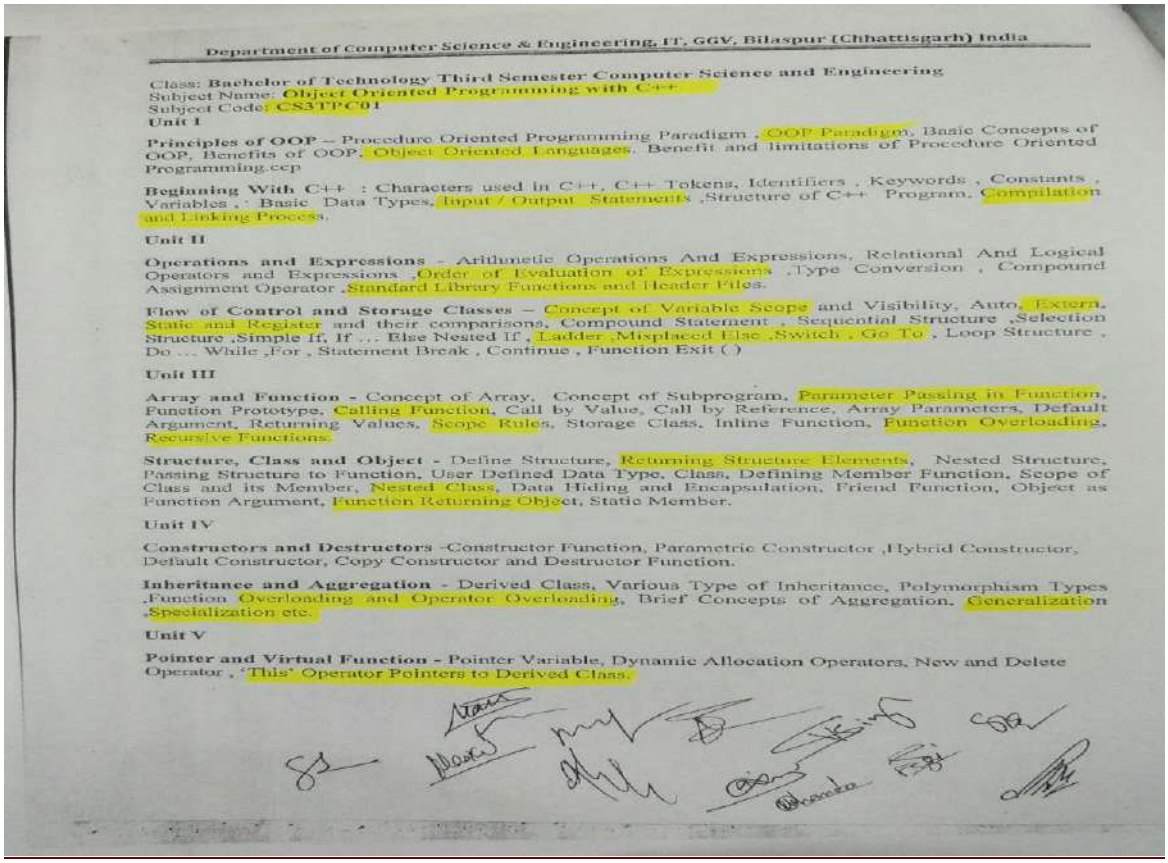
SEQUENTIAL LOGIC: Introduction, Flip –Flops, triggering of Flips –Flops, Analysis of Clocked Sequential Circuits, State Reduction and Assignment. Flip –Flop Excitation Tables Design Procedure, Design of Counters, Design with State Equations.

Unit V:

REGISTERS, COUNTERS, MEMORY UNIT & FPGA PROGRAMING Introduction, Registers, Shift Registers, Ripple Counters, Synchronous Counters, Timing Sequences, The Memory Unit Examples of Random Access Memories, FPGA: Introduction, FPGA Programming.

Reference Books:

1. Digital Logic & Computer Design, M. Mano (PH1) .
2. Switching Circuit & Finite automata –ZVI Kohavi (TMH).
3. Fletcher W.I.: An engineering approach to Digital Design (PH1)



Department of Computer Science & Engineering, IT, GGV, Bilaspur (Chhattisgarh) India

Class: Bachelor of Technology Third Semester Computer Science and Engineering
Subject Name: Object Oriented Programming with C++
Subject Code: CS3TPC01

Unit I

Principles of OOP – Procedure Oriented Programming Paradigm , OOP Paradigm, Basic Concepts of OOP, Benefits of OOP, Object Oriented Languages. Benefit and limitations of Procedure Oriented Programming.cep

Beginning With C++ : Characters used in C++, C++ Tokens, Identifiers , Keywords , Constants , Variables , Basic Data Types, Input / Output Statements ,Structure of C++ Program, Compilation and Linking Process.

Unit II

Operations and Expressions - Arithmetic Operations And Expressions, Relational And Logical Operators and Expressions ,Order of Evaluation of Expressions ,Type Conversion , Compound Assignment Operator ,Standard Library Functions and Header Files.

Flow of Control and Storage Classes – Concept of Variable Scope and Visibility, Auto, Extern, Static and Register and their comparisons, Compound Statement , Sequential Structure ,Selection Structure ,Simple If, If ... Else Nested If , Ladder ,Misplaced Else ,Switch , Go To , Loop Structure , Do ... While ,For , Statement Break , Continue , Function Exit ( )

Unit III

Array and Function - Concept of Array, Concept of Subprogram, Parameter Passing in Function, Function Prototype, Calling Function, Call by Value, Call by Reference, Array Parameters, Default Argument, Returning Values, Scope Rules, Storage Class, Inline Function, Function Overloading, Recursive Functions.

Structure, Class and Object - Define Structure, Returning Structure Elements, Nested Structure, Passing Structure to Function, User Defined Data Type, Class, Defining Member Function, Scope of Class and its Member, Nested Class, Data Hiding and Encapsulation, Friend Function, Object as Function Argument, Function Returning Object, Static Member.

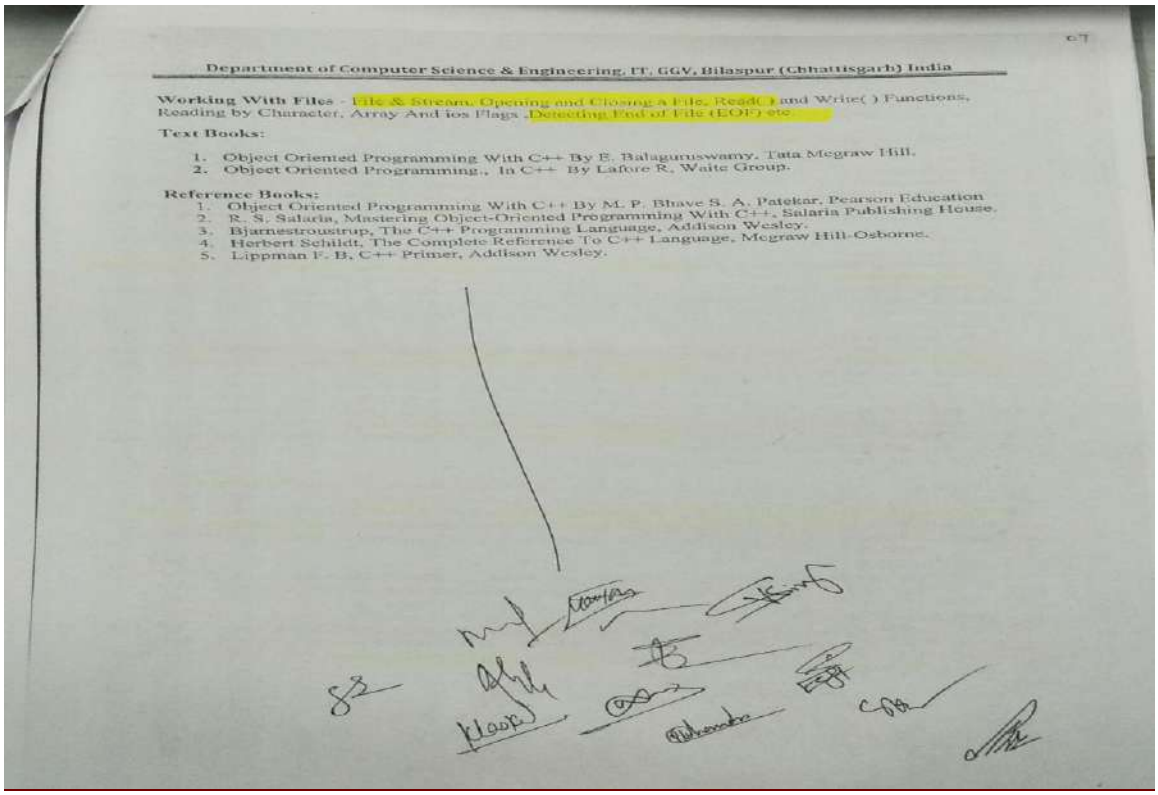
Unit IV

Constructors and Destructors -Constructor Function, Parametric Constructor ,Hybrid Constructor, Default Constructor, Copy Constructor and Destructor Function.

Inheritance and Aggregation - Derived Class, Various Type of Inheritance, Polymorphism Types ,Function Overloading and Operator Overloading, Brief Concepts of Aggregation, Generalization ,Specialization etc.

Unit V

Pointer and Virtual Function - Pointer Variable, Dynamic Allocation Operators, New and Delete Operator , 'This' Operator Pointers to Derived Class.



Department of Computer Science & Engineering, IT, GGV, Bilaspur (Chhattisgarh) India

Working With Files - File & Stream, Opening and Closing a File, Read( ) and Write( ) Functions, Reading by Character, Array And ios Flags ,Detecting End of File (EOF) etc.

Text Books:

1. Object Oriented Programming With C++ By E. Balaguruswamy, Tata Megraw Hill.
2. Object Oriented Programming., In C++ By Lafore R, Waite Group.

Reference Books:

1. Object Oriented Programming With C++ By M. P. Bhave S. A. Patekar, Pearson Education
2. R. S. Salaria, Mastering Object-Oriented Programming With C++, Salaria Publishing House.
3. Bjarnestroustrup, The C++ Programming Language, Addison Wesley.
4. Herbert Schildt, The Complete Reference To C++ Language, Megraw Hill-Osborne.
5. Lippman F. B, C++ Primer, Addison Wesley.

Department of Computer Science & Engineering, IT, GGV, Bilaspur (Chhattisgarh) India

Class: **Bachelor of Technology Fourth Semester Computer Science and Engineering**
Subject Name: **Data Structure and Programming Methodology**
Subject Code: **CS4TPC03**

Unit I:

String algorithms, pattern search and editing, Arrays algorithms, development simple examples of algorithm development, Complexity Analysis, Divided & conquer, binary search, selection sort, insertion sort, merge sort, quick sort complexity of sorting.

Unit II:

Linear list: Stacks, application of Stacks, arithmetic notations, recursion, queues and circular queues, Linked list definition, insertion and deletion of nodes, circular and doubly linked list, Header nodes.

Unit III:

Trees, AVL trees, Threaded trees, Heap sort, B-tress.

Unit IV:

Graph and representation: graph algorithms, optimization and Greedy methods, minimum spanning tree, shortest path, DFS, BFS search, hashing.

Unit V:

Files: File organization, sequential file, direct file organization, index sequential file organization, Data storage and management.

Reference Books:

1. Data Structures and Algorithm Analysis in C++, 2/e by Mark Allen Weiss, Pearson Education.
2. Wirth Niclaus , "Algorithm + Data Structure = Programs " PHI
3. Horwitz E. and Sahani S. "Fundamentals and Data Structure ", Computer Science Press.
4. Knuth D. "Threat of Computer Programming ", Vol 1-2 Addision – Wesley.
5. Aho A.V.Hopcraft and Ullman J.E. "Data Structure and Algorithms" addsion Wesley ".
6. Tanonbaum , A. M. and Augenstein , M.J. "Data Structure with Pascal" PHI.
7. Trambley and Sorenson "Data Structure using Pascal", MGH.
8. Stubbs D. "Data Structure with Abstract Data Type and Modula 2", Brooks & Cole Publication Comp.

Class: **Bachelor of Technology Fourth Semester Computer Science and Engineering**
Subject Name: **Java Programming**
Subject Code: CS4TPC02

UNIT-I

Object Oriented Paradigm, Basic Concepts of Object-Oriented Programming, Benefits of OOP, Applications of OOP, Java History, Java Features, How Java Differs from C and C++, Java and Internet, Java and World Wide Web, Web Browsers, Hardware and Software Requirements, Java Support Systems, Java Environment, Java Program Structure, Java Tokens, Java Statements, Installing and Configuring Java, Implementing a Java Program, Java Virtual Machine, Command Line Arguments, Programming Style.

Unit-II

Constants, Variables and Data Types, Declaration of Variables, Giving values to variables, Scope of Variables, Symbolic Constants, Type Casting, Getting Values of Variables, Standard Default Values, Java Operators, Arithmetic Expression, Evaluation of Expressions, Precedence of Arithmetic Operators, Operator Precedence and Associativity , Mathematical Functions, Control Statements (if statement, switch statement and Conditional operator statement), Decision Making and Looping (while construct, do construct, for construct), Jumps in Loops, Labelled Loops.

Unit-III

Introduction of Class, Defining a Class, Fields Declaration, Creating Objects, Accessing Class Members, Constructors, Methods Overloading, Static Members, Nesting of Methods, Inheritance : Extending a Class, Overriding Methods, Final Variables and Methods, Final Classes, Finalizer Methods, Abstract Methods and Classes, Methods with VARARGS, Visibility Control, Introduction of Array, One Dimensional Array, Creating an array, Two-Dimensional arrays, Strings, Vectors, Wrapper Classes, Enumerated Types. Defining Interfaces, Extending Interfaces, Implementing Interfaces, Accessing Interface Variables, Java API Packages, Using System Packages, Naming Conventions, Creating Packages, Accessing a Package, Using a Package, Adding a Class to a Package, Hiding Classes, Static Import.

Unit-IV

Introduction to Multithreaded Programming, Difference between Multithreading and Multitasking, Creating threads, Extending the thread class, Stopping and Blocking a thread, Life Cycle of a thread, Using thread Methods, Thread Exception, Thread Priority, Synchronization, Implementing the Runnable Interface, Inter-thread Communication, Types of Errors, Exceptions, Syntax of Exception Handling Code, Multiple Catch Statements, Using Finally Statement, Throwing our own Exceptions.

Unit-V

Introduction of Applet Programming, How Applets Differ from Applications, Preparing to Write Applets, Building Applet Code, Applet Life Cycle, Creating an Executable Applet, Designing a Web Page, Applet Tag, Adding Applet to HTML file, Running the Applet, Attributes of Applet tag, Passing Parameters to Applets, Aligning the Display, Displaying Numeric values, Getting input from the user, Event handling, Introduction of Graphics Programming, Using Graphics class to draw Lines, Rectangles, Circles, Ellipses, Arcs, Polygons, Line Graphs, Bar Charts, Using Control Loops in Applets, Introduction to AWT package, Introduction of Input / Output files in Java, Concept of Streams, Stream

Department of Computer Science & Engineering, IT, GGV, Bilaspur (Chhattisgarh) India

Class: **Bachelor of Technology Fourth Semester Computer Science and Engineering**
Subject Name: **Data Communication and Networks**

Subject Code: CS4TPC01

Unit I
Introduction:
Components of Data Communication, Network Criterion, Network Topologies, Types of Networks. OSI, TCP/IP and other networks models, Examples of Networks: Arpanet, Internet.
Physical Layer: Introduction of transmission, Transmission media: Guided and Unguided, Switching and Encoding asynchronous communications, ISDN.

Unit II
Data link layer:
Logical Link Control Sub Layer: Design issues, Framing, Error Detection and Correction, CRC, Flow Control Protocols.
Medium Access Control Sub layer: Random Access Protocols, Controlled Access Protocols. Channelization Protocols, IEEE 802.X Standard Ethernet.

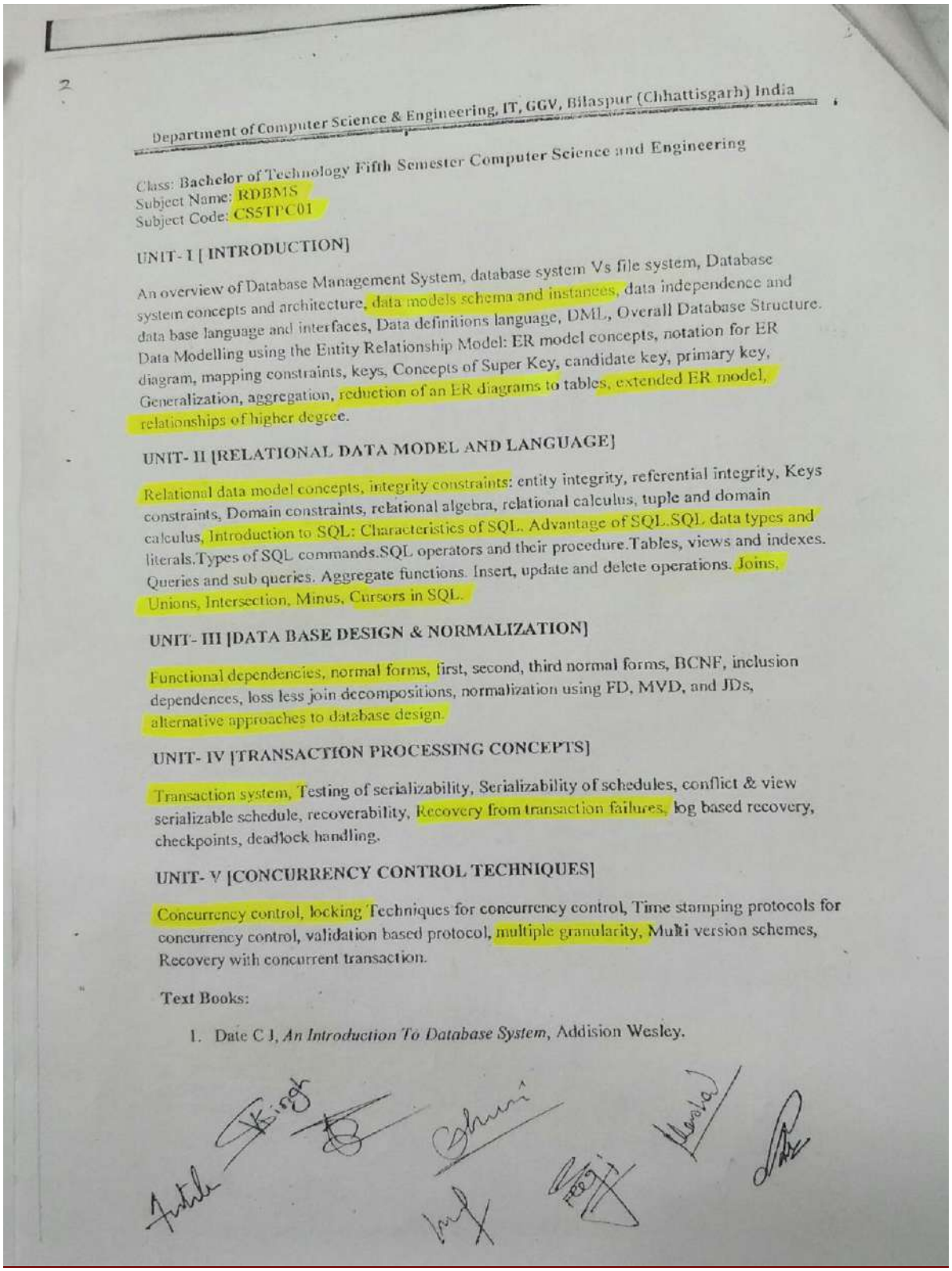
Unit III
Network Layer:
Forwarding and Routing, Virtual Circuit, Datagram Networks, Internet Protocol (IP)-IPv4 and IPv6, ICMP, Routing Protocols: Link State Routing, Distance Vector Routing, Hierarchical Routing, RIP, OSPF, BGP, Congestion Control, Mobile IP, IPsec.

Unit IV
Transport Layer:
Transport Layer Services: Multiplexing and Demultiplexing, UDP.
Connection-Oriented Transport: TCP-Segment Structure, RTT estimation, Flow Control, Connection Management, and Congestion Control.
Integrated and Differentiated Services.

Unit V
Application Layer:
Principles of Network Applications, World Wide Web, Protocols: HTTP, FTP, SMTP, MIME, DNS.
Network Security: Principles of Cryptography, Attacks and Countermeasures, Firewalls.
Recent technology on Computer Network.

TEXT BOOKS :
1. "Data Communications and Networking"-Behrouz A. Forouzan Third Edition TMH.
2. "Computer Networks"-Andrew S Tanenbaum, 4th Edition. Pearson Education/PHI

REFERENCE BOOKS:
1. "An Engineering Approach to Computer Networks"-S.Keshav, 2nd Edition, Pearson Education
2. "Understanding communications and Networks", 3rd Edition, W.A. Shay, Thomson James



2

Department of Computer Science & Engineering, IT, GGV, Bilaspur (Chhattisgarh) India

Class: Bachelor of Technology Fifth Semester Computer Science and Engineering
Subject Name: RDBMS
Subject Code: CS5TPC01

UNIT- I [INTRODUCTION]

An overview of Database Management System, database system Vs file system, Database system concepts and architecture, data models schema and instances, data independence and data base language and interfaces, Data definitions language, DML, Overall Database Structure. Data Modelling using the Entity Relationship Model: ER model concepts, notation for ER diagram, mapping constraints, keys, Concepts of Super Key, candidate key, primary key, Generalization, aggregation, reduction of an ER diagrams to tables, extended ER model, relationships of higher degree.

UNIT- II [RELATIONAL DATA MODEL AND LANGUAGE]

Relational data model concepts, integrity constraints: entity integrity, referential integrity, Keys constraints, Domain constraints, relational algebra, relational calculus, tuple and domain calculus, Introduction to SQL: Characteristics of SQL. Advantage of SQL.SQL data types and literals.Types of SQL commands.SQL operators and their procedure.Tables, views and indexes. Queries and sub queries. Aggregate functions. Insert, update and delete operations. Joins, Unions, Intersection, Minus, Cursors in SQL.

UNIT- III [DATA BASE DESIGN & NORMALIZATION]

Functional dependencies, normal forms, first, second, third normal forms, BCNF, inclusion dependences, loss less join decompositions, normalization using FD, MVD, and JDs, alternative approaches to database design.

UNIT- IV [TRANSACTION PROCESSING CONCEPTS]

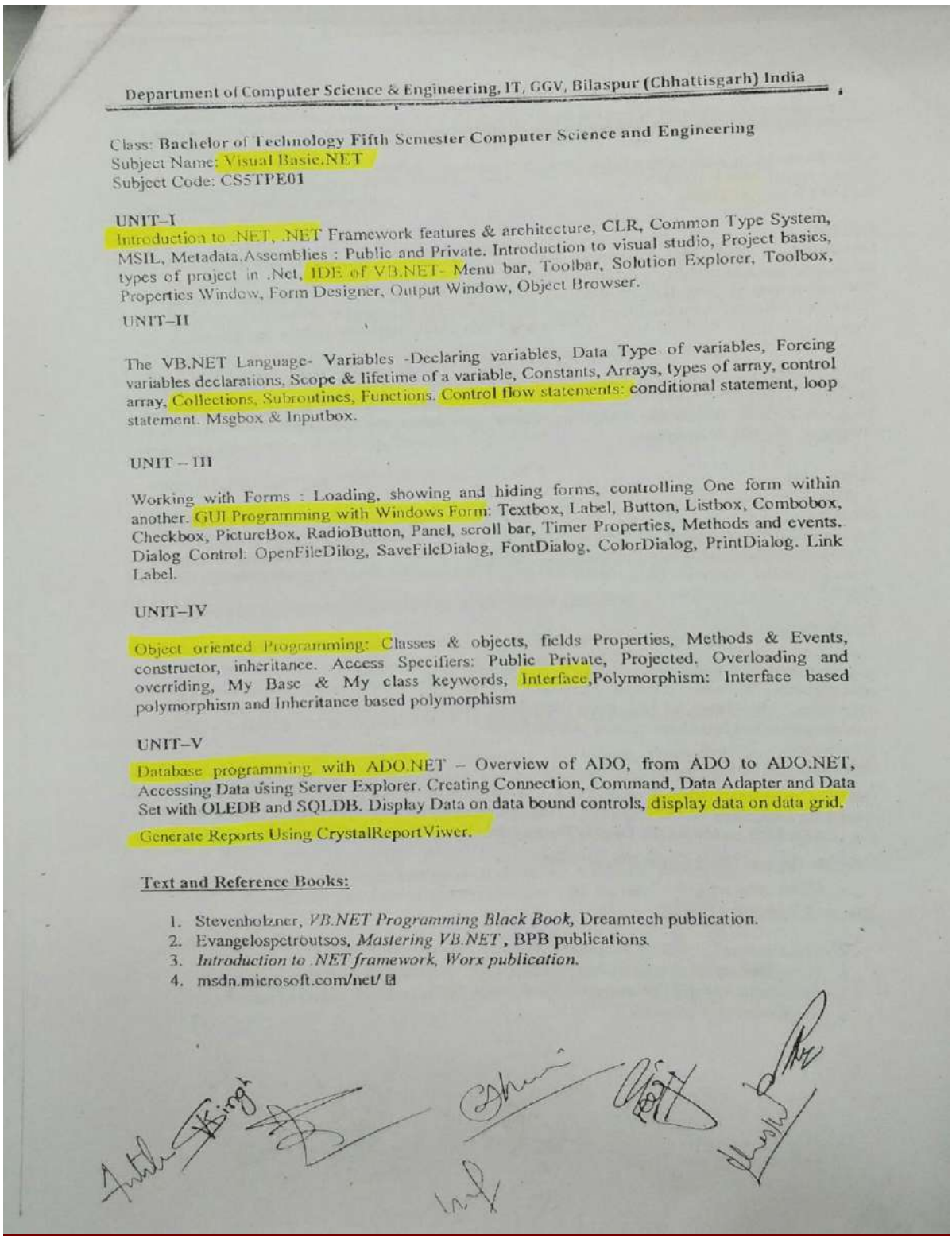
Transaction system, Testing of serializability, Serializability of schedules, conflict & view serializable schedule, recoverability, Recovery from transaction failures, log based recovery, checkpoints, deadlock handling.

UNIT- V [CONCURRENCY CONTROL TECHNIQUES]

Concurrency control, locking Techniques for concurrency control, Time stamping protocols for concurrency control, validation based protocol, multiple granularity, Multi version schemes, Recovery with concurrent transaction.

Text Books:

1. Date C J, *An Introduction To Database System*, Addision Wesley.



Department of Computer Science & Engineering, IT, GGV, Bilaspur (Chhattisgarh) India

Class: Bachelor of Technology Fifth Semester Computer Science and Engineering
Subject Name: Visual Basic.NET
Subject Code: CS5TPE01

UNIT–I

Introduction to .NET, .NET Framework features & architecture, CLR, Common Type System, MSIL, Metadata,Assemblies : Public and Private. Introduction to visual studio, Project basics, types of project in .Net, IDE of VB.NET- Menu bar, Toolbar, Solution Explorer, Toolbox, Properties Window, Form Designer, Output Window, Object Browser.

UNIT–II

The VB.NET Language- Variables -Declaring variables, Data Type of variables, Forcing variables declarations, Scope & lifetime of a variable, Constants, Arrays, types of array, control array, Collections, Subroutines, Functions. Control flow statements: conditional statement, loop statement. Msgbox & Inputbox.

UNIT – III

Working with Forms : Loading, showing and hiding forms, controlling One form within another. GUI Programming with Windows Form: Textbox, Label, Button, Listbox, Combobox, Checkbox, PictureBox, RadioButton, Panel, scroll bar, Timer Properties, Methods and events. Dialog Control: OpenFileDilog, SaveFileDialog, FontDialog, ColorDialog, PrintDialog. Link Label.

UNIT–IV

Object oriented Programming: Classes & objects, fields Properties, Methods & Events, constructor, inheritance. Access Specifiers: Public Private, Projected. Overloading and overriding, My Base & My class keywords, Interface,Polymorphism: Interface based polymorphism and Inheritance based polymorphism

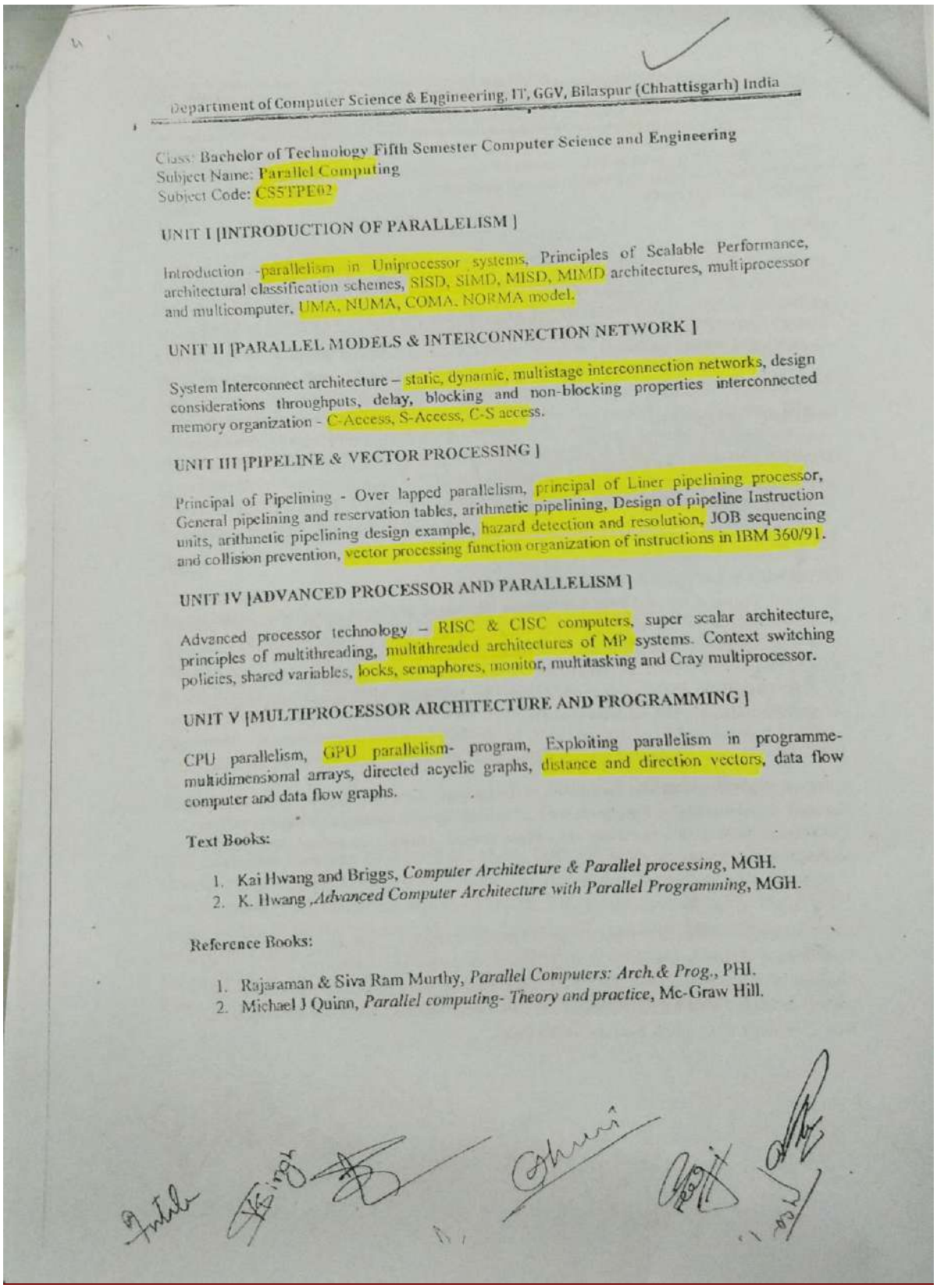
UNIT–V

Database programming with ADO.NET – Overview of ADO, from ADO to ADO.NET, Accessing Data using Server Explorer. Creating Connection, Command, Data Adapter and Data Set with OLEDB and SQLDB. Display Data on data bound controls, display data on data grid.

Generate Reports Using CrystalReportViwer.

Text and Reference Books:

1. Stevenholzner, *VB.NET Programming Black Book*, Dreamtech publication.
2. Evangelospetroutsos, *Mastering VB.NET*, BPB publications.
3. *Introduction to .NET framework, Worx publication.*
4. msdn.microsoft.com/net/



Department of Computer Science & Engineering, IT, GGV, Bilaspur (Chhattisgarh) India

Class: Bachelor of Technology Fifth Semester Computer Science and Engineering
Subject Name: Parallel Computing
Subject Code: CS5TPE02

UNIT I [INTRODUCTION OF PARALLELISM]

Introduction -parallelism in Uniprocessor systems, Principles of Scalable Performance, architectural classification schemes, SISD, SIMD, MISD, MIMD architectures, multiprocessor and multicomputer, UMA, NUMA, COMA, NORMA model.

UNIT II [PARALLEL MODELS & INTERCONNECTION NETWORK]

System Interconnect architecture – static, dynamic, multistage interconnection networks, design considerations throughputs, delay, blocking and non-blocking properties interconnected memory organization - C-Access, S-Access, C-S access.

UNIT III [PIPELINE & VECTOR PROCESSING]

Principal of Pipelining - Over lapped parallelism, principal of Liner pipelining processor, General pipelining and reservation tables, arithmetic pipelining, Design of pipeline Instruction units, arithmetic pipelining design example, hazard detection and resolution, JOB sequencing and collision prevention, vector processing function organization of instructions in IBM 360/91.

UNIT IV [ADVANCED PROCESSOR AND PARALLELISM]

Advanced processor technology – RISC & CISC computers, super scalar architecture, principles of multithreading, multithreaded architectures of MP systems. Context switching policies, shared variables, locks, semaphores, monitor, multitasking and Cray multiprocessor.

UNIT V [MULTIPROCESSOR ARCHITECTURE AND PROGRAMMING]

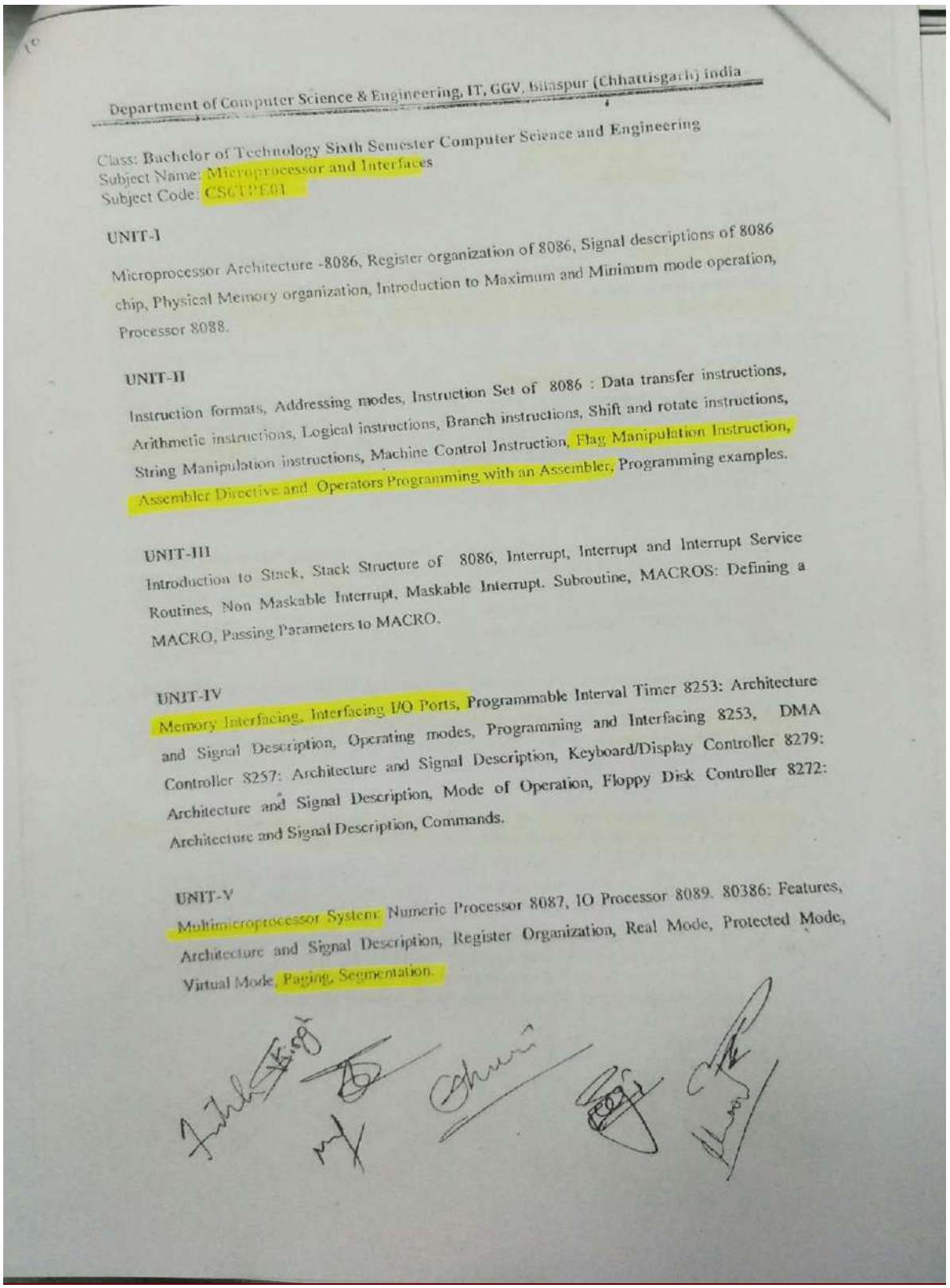
CPU parallelism, GPU parallelism- program, Exploiting parallelism in programme-multidimensional arrays, directed acyclic graphs, distance and direction vectors, data flow computer and data flow graphs.

Text Books:

1. Kai Hwang and Briggs, *Computer Architecture & Parallel processing*, MGH.
2. K. Hwang ,*Advanced Computer Architecture with Parallel Programming*, MGH.

Reference Books:

1. Rajaraman & Siva Ram Murthy, *Parallel Computers: Arch.& Prog.*, PHI.
2. Michael J Quinn, *Parallel computing- Theory and practice*, Mc-Graw Hill.



Department of Computer Science & Engineering, IT, GGV, Bilaspur (Chhattisgarh) India

Class: Bachelor of Technology Sixth Semester Computer Science and Engineering
Subject Name: Microprocessor and Interfaces
Subject Code: CSCTPE61

UNIT-I

Microprocessor Architecture -8086, Register organization of 8086, Signal descriptions of 8086 chip, Physical Memory organization, Introduction to Maximum and Minimum mode operation, Processor 8088.

UNIT-II

Instruction formats, Addressing modes, Instruction Set of 8086 : Data transfer instructions, Arithmetic instructions, Logical instructions, Branch instructions, Shift and rotate instructions, String Manipulation instructions, Machine Control Instruction, Flag Manipulation Instruction, Assembler Directive and Operators Programming with an Assembler, Programming examples.

UNIT-III

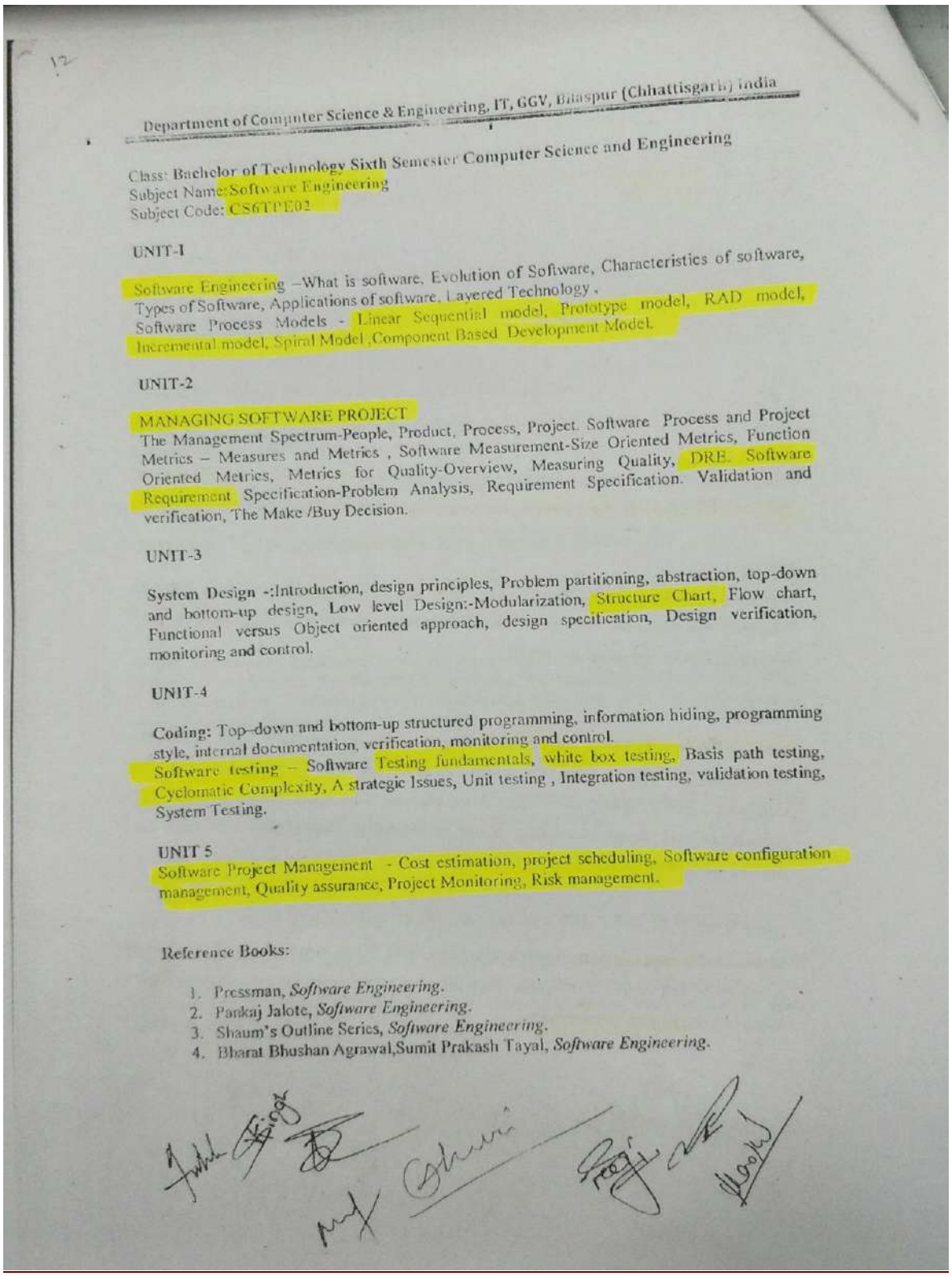
Introduction to Stack, Stack Structure of 8086, Interrupt, Interrupt and Interrupt Service Routines, Non Maskable Interrupt, Maskable Interrupt. Subroutine, MACROS: Defining a MACRO, Passing Parameters to MACRO.

UNIT-IV

Memory Interfacing, Interfacing I/O Ports, Programmable Interval Timer 8253: Architecture and Signal Description, Operating modes, Programming and Interfacing 8253, DMA Controller 8257: Architecture and Signal Description, Keyboard/Display Controller 8279: Architecture and Signal Description, Mode of Operation, Floppy Disk Controller 8272: Architecture and Signal Description, Commands.

UNIT-V

Multimicroprocessor System: Numeric Processor 8087, IO Processor 8089. 80386: Features, Architecture and Signal Description, Register Organization, Real Mode, Protected Mode, Virtual Mode, Paging, Segmentation.



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Department of Computer Science & Engineering, IT, GGV, Bilaspur (Chhattisgarh) India

Class: Bachelor of Technology Sixth Semester Computer Science and Engineering
Subject Name: Software Engineering
Subject Code: CS6TPE02

UNIT-I

Software Engineering –What is software, Evolution of Software, Characteristics of software, Types of Software, Applications of software, Layered Technology , Software Process Models - Linear Sequential model, Prototype model, RAD model, Incremental model, Spiral Model ,Component Based Development Model.

UNIT-2

MANAGING SOFTWARE PROJECT
The Management Spectrum-People, Product, Process, Project. Software Process and Project Metrics – Measures and Metrics , Software Measurement-Size Oriented Metrics, Function Oriented Metrics, Metrics for Quality-Overview, Measuring Quality, DRE. Software Requirement Specification-Problem Analysis, Requirement Specification. Validation and verification, The Make /Buy Decision.

UNIT-3

System Design -:Introduction, design principles, Problem partitioning, abstraction, top-down and bottom-up design, Low level Design:-Modularization, Structure Chart, Flow chart, Functional versus Object oriented approach, design specification, Design verification, monitoring and control.

UNIT-4

Coding: Top–down and bottom-up structured programming, information hiding, programming style, internal documentation, verification, monitoring and control.
Software testing – Software Testing fundamentals, white box testing, Basis path testing, Cyclomatic Complexity, A strategic Issues, Unit testing , Integration testing, validation testing, System Testing.

UNIT 5
Software Project Management - Cost estimation, project scheduling, Software configuration management, Quality assurance, Project Monitoring, Risk management.

Reference Books:

1. Pressman, *Software Engineering*.
2. Pankaj Jalote, *Software Engineering*.
3. Shaum's Outline Series, *Software Engineering*.
4. Bharat Bhushan Agrawal,Sumit Prakash Tayal, *Software Engineering*.

Depart[illegible]t of Computer Science & Engineering, IT, GGV, Bilaspur (Chhattisgarh) India

Class: Bachelor of Technology Sixth Semester Computer Science and Engineering
Subject Name: Computer Graphics
Subject Code: CS6TOE01

UNIT I

Line Generation Points, lines, Plaines Vector, pixels and frame buffers, Vector and character generation. Graphics Primitives, Display devices , Primitive operation , Display- file structure, Display control text.

UNIT II

Polygons: Polygons representation, Entering polygons, Filling Polygons.Transformation: Matrices Transformation, transformation routines Display procedures.

UNIT III

Segments: Segments table, Creating Deleting and renaming a segment Visibility, Image transformation. Windowing and Clipping : Viewing transforming, Clipping, Generalized clipping , multiple windowing.

UNIT IV

Three Dimensions: 3-D Geometry Primitives, Transformation, Projection, Clipping, Hidden line and Surfaces Back-face Removal Algorithms, Hidden line methods.

UNIT V

Rendering and Illumination: Introduction to curve generation. Bezier. Hermit and B-spline algorithms and their comparisons.

Reference book:

1. Hearn Baker, *Computer Graphics*, PHI.
2. Rogers , *Procedural Elements of Computer Graphics* , McGraw- Hill.
3. Newman & Sproulle , *Principles of Interacive Computer Graphics*, MGH.
4. Harringtons S., *Computer Graphics A Programming Approach*, MGH.
5. Rogers & Adams, *Mathematical Elements of Computers Graphics*, MGH.
6. Henry Baper , *Computer Graphics*.

Department of Computer Science & Engineering, IT, GGV, Bilaspur (Chhattisgarh) India

Class: Bachelor of Technology Fifth Semester Computer Science and Engineering
Subject Name: Management Information System
Subject Code: CS5TOE01

UNIT I

Introduction of Information System, Fundamentals of Information System, Strategic Role of Information in Organization and Management, Three dimensions of Information System, Information System and Organization, Business Process Re-Engineering, Traditional and Computer based information system.

UNIT II

Integration of Information, Types of Decision making in Organization, Decision Making Process, Models and Decision Support, Decision in business Areas, Strategic Analysis.

UNIT III

Information System Planning, Types of Controlling Information System, Development of MIS Methodology and Tools/Techniques for Systematic Identification, Evaluation, Modification of MIS, Information System Success and Failure Implementation.

UNIT IV

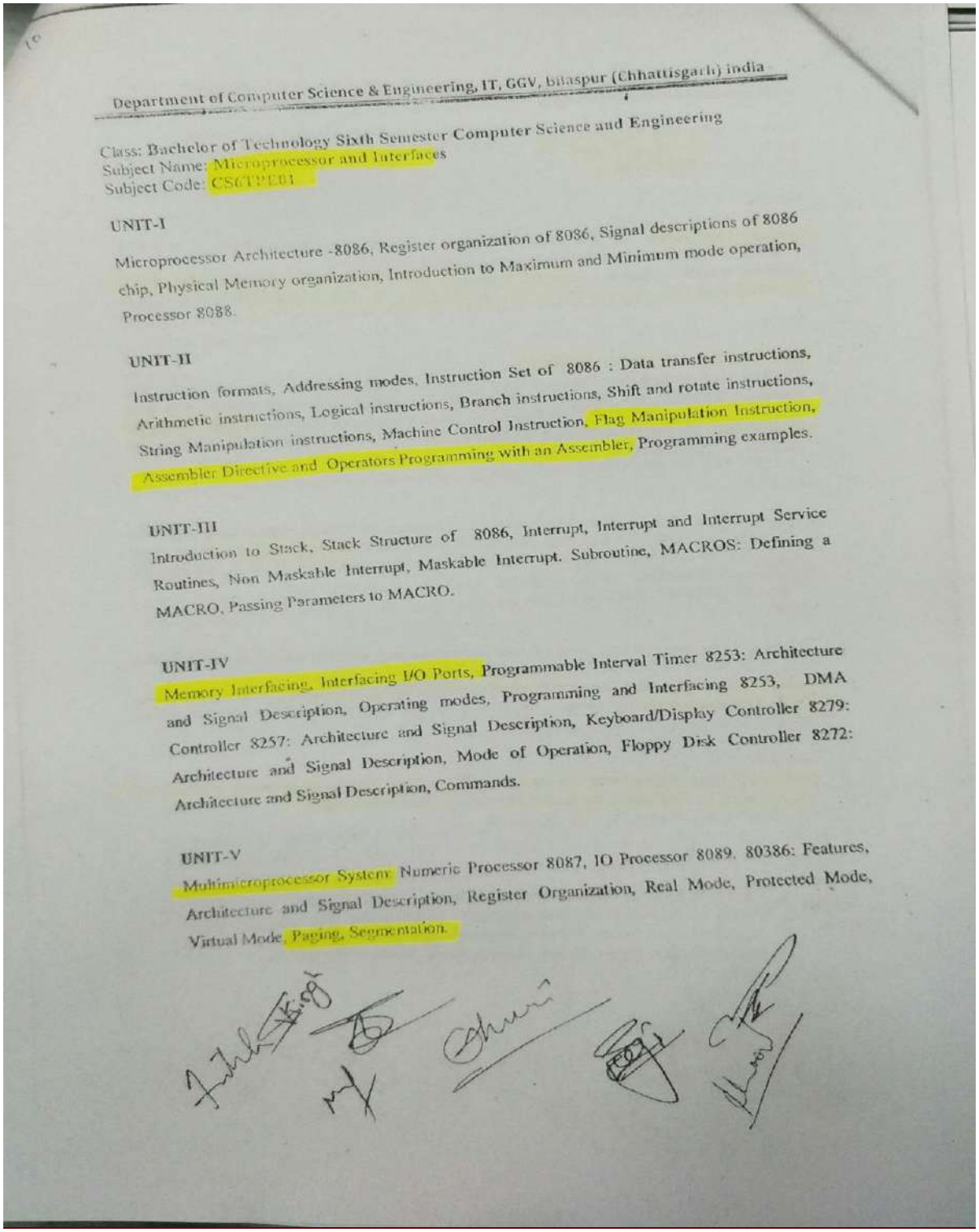
Information System for Business Operations: Cross Functional Information System, A study of major Financial, Production, Human Resource Information System and Marketing Information System.

UNIT V

Management of Information System and End - User Computing, Security and Ethical issues of Information System, Major issues in Information System, Auditing of Information System.

Reference Books:

1. Gerald V,. Post and David L. Anderson, *Management Information System: Solving Business Problems with Information Technology*, Tata McGraw - Hill Edition.
2. James A. O'Brien, *Management Information System: Managing Information Technology in the Internet worked Enterprise*, Tata McGraw -Hill Edition.
3. Kenneth C. Laudon and Jane Price Loudon, *Management Information System: A Contemporary Perspective*, Maxwell Macmillan International Editions.



Department of Computer Science & Engineering, IT, GGV, Bilaspur (Chhattisgarh) India

Class: Bachelor of Technology Sixth Semester Computer Science and Engineering
Subject Name: Microprocessor and Interfaces
Subject Code: CS6TPE01

UNIT-I

Microprocessor Architecture -8086, Register organization of 8086, Signal descriptions of 8086 chip, Physical Memory organization, Introduction to Maximum and Minimum mode operation, Processor 8088.

UNIT-II

Instruction formats, Addressing modes, Instruction Set of 8086 : Data transfer instructions, Arithmetic instructions, Logical instructions, Branch instructions, Shift and rotate instructions, String Manipulation instructions, Machine Control Instruction, Flag Manipulation Instruction, Assembler Directive and Operators Programming with an Assembler, Programming examples.

UNIT-III

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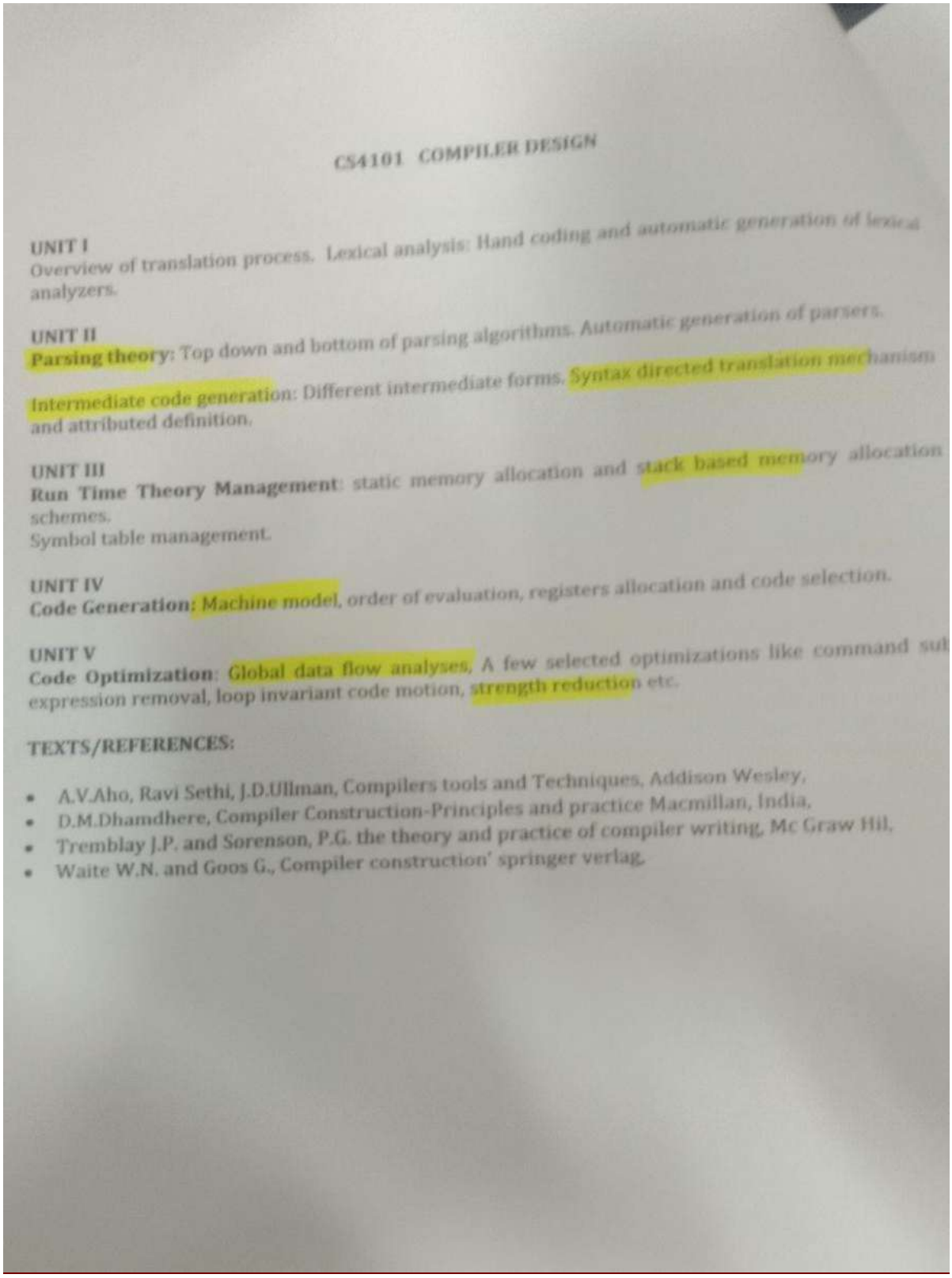
UNIT-V

Multimicroprocessor System: Numeric Processor 8087, IO Processor 8089. 80386: Features, Architecture and Signal Description, Register Organization, Real Mode, Protected Mode, Virtual Mode, Paging, Segmentation.



CS4101 COMPILER DESIGN

UNIT I
Overview of translation process. Lexical analysis: Hand coding and automatic generation of lexical analyzers.

UNIT II
Parsing theory: Top down and bottom of parsing algorithms. Automatic generation of parsers.

Intermediate code generation: Different intermediate forms. Syntax directed translation mechanism and attributed definition.

UNIT III
Run Time Theory Management: static memory allocation and stack based memory allocation schemes.
Symbol table management.

UNIT IV
Code Generation: Machine model, order of evaluation, registers allocation and code selection.

UNIT V
Code Optimization: Global data flow analyses, A few selected optimizations like command sub expression removal, loop invariant code motion, strength reduction etc.

TEXTS/REFERENCES:

- A.V.Aho, Ravi Sethi, J.D.Ullman, Compilers tools and Techniques, Addison Wesley,
- D.M.Dhamdhere, Compiler Construction-Principles and practice Macmillan, India,
- Tremblay J.P. and Sorenson, P.G. the theory and practice of compiler writing, Mc Graw Hil,
- Waite W.N. and Goos G., Compiler construction' springer verlag,

CS4103 NETWORK SECURITY

UNIT I

Services , Mechanisms ,and Attacks , The OSI Security Architecture , A Model for Network Security , symmetric cipher model , substitution techniques Transposition techniques, Rotor machines , Steganography .

UNIT II

Block ciphers and the data encryption standard , simplified DES , Block cipher principles , The data Encryption Standard ,The Strength of DEC. Differential and Linear Cryptanalysis ,Block Cipher Design principles ,Block Cipher Modes of Operation , Evaluation Criteria for AES The AES cipher , Triple DES , blowfish , RC5, Rc4 Stream Cipher ,

UNIT –III

principles of public –Key Cryptosystems , public –Key cryptosystems , Applications for public –Key Cryptosystems , Requirements for public –Key Cryptosystems , Public –Key Cryptosystems , The RAS Algorithm , Computational Aspects , The Security of RSA , Key management , Distribution of public keys , public –Key Distribution of Secret Keys , Differ –Hellmann Key Exchange,

UNIT-IV

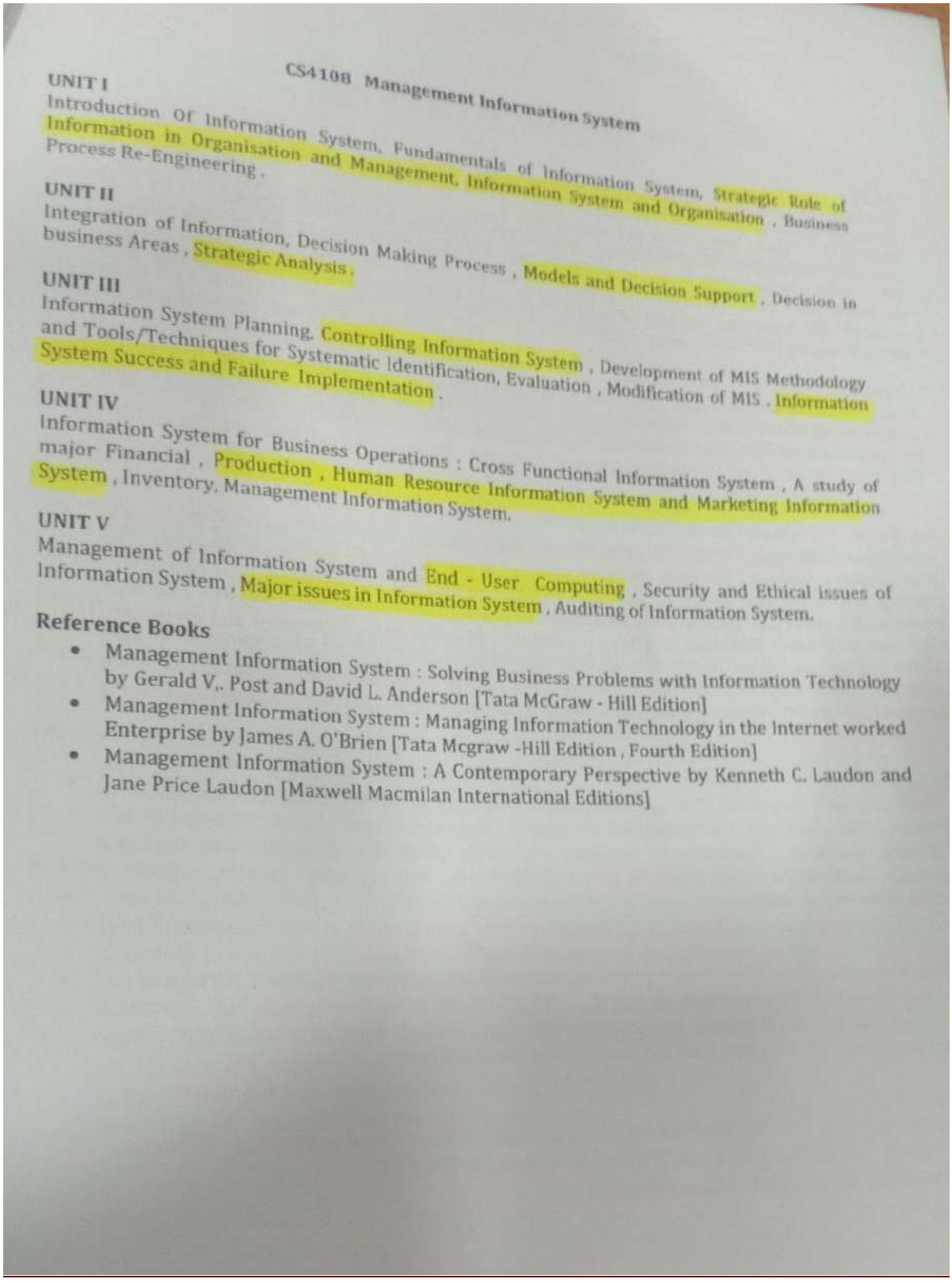
Web Security :Web Security Threats , Web Traffic Security Approaches , SSL Architecture , SSL Record Protocol , Change Cipher Spec Protocol ,Alert Protocol , Handshake Protocol , Cryptographic Computations ,Transport Layer Security , Secure Electronic Transaction ,

UNIT V

Intruders : Intrusion Techniques ,Intrusion Detection , Audit Records , Statistical Anomaly Detection ,Rule –Based Intrusion Detection ,The Base –Rate Fallacy , Distributed Intrusion Detection , Honeypots , Intrusion Detection Exchange Format Firewall Design principles , Firewall Characteristics , Types of Firewalls , Firewall Configurations .

Books :

- Cryptography and Network Security, Principles and Practice Third edition , William Stallings .



CS4108 Management Information System

UNIT I

Introduction Of Information System, Fundamentals of Information System, Strategic Role of Information in Organisation and Management, Information System and Organisation , Business Process Re-Engineering .

UNIT II

Integration of Information, Decision Making Process , Models and Decision Support , Decision in business Areas , Strategic Analysis .

UNIT III

Information System Planning, Controlling Information System , Development of MIS Methodology and Tools/Techniques for Systematic Identification, Evaluation , Modification of MIS . Information System Success and Failure Implementation .

UNIT IV

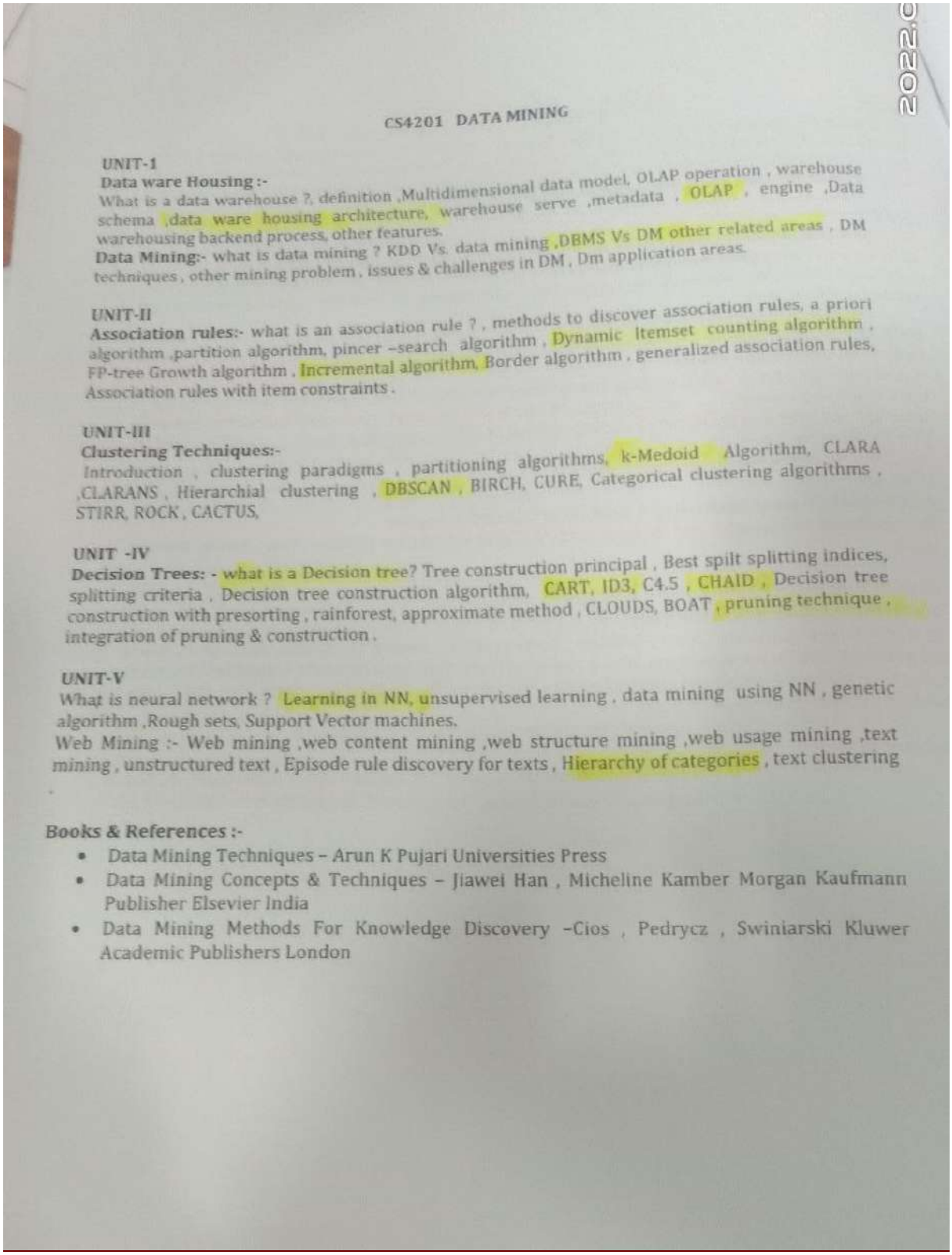
Information System for Business Operations : Cross Functional Information System , A study of major Financial , Production , Human Resource Information System and Marketing Information System , Inventory, Management Information System.

UNIT V

Management of Information System and End - User Computing , Security and Ethical issues of Information System , Major issues in Information System , Auditing of Information System.

Reference Books

- Management Information System : Solving Business Problems with Information Technology by Gerald V,. Post and David L. Anderson [Tata McGraw - Hill Edition]
- Management Information System : Managing Information Technology in the Internet worked Enterprise by James A. O'Brien [Tata Mcgraw -Hill Edition , Fourth Edition]
- Management Information System : A Contemporary Perspective by Kenneth C. Laudon and Jane Price Laudon [Maxwell Macmilan International Editions]



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CS4201 DATA MINING

UNIT-1
Data ware Housing :-
What is a data warehouse ?, definition ,Multidimensional data model, OLAP operation , warehouse schema ,data ware housing architecture, warehouse serve ,metadata , OLAP , engine ,Data warehousing backend process, other features.
Data Mining:- what is data mining ? KDD Vs. data mining ,DBMS Vs DM other related areas , DM techniques , other mining problem , issues & challenges in DM , Dm application areas.

UNIT-II
Association rules:- what is an association rule ? , methods to discover association rules, a priori algorithm ,partition algorithm, pincer –search algorithm , Dynamic Itemset counting algorithm , FP-tree Growth algorithm , Incremental algorithm, Border algorithm , generalized association rules, Association rules with item constraints .

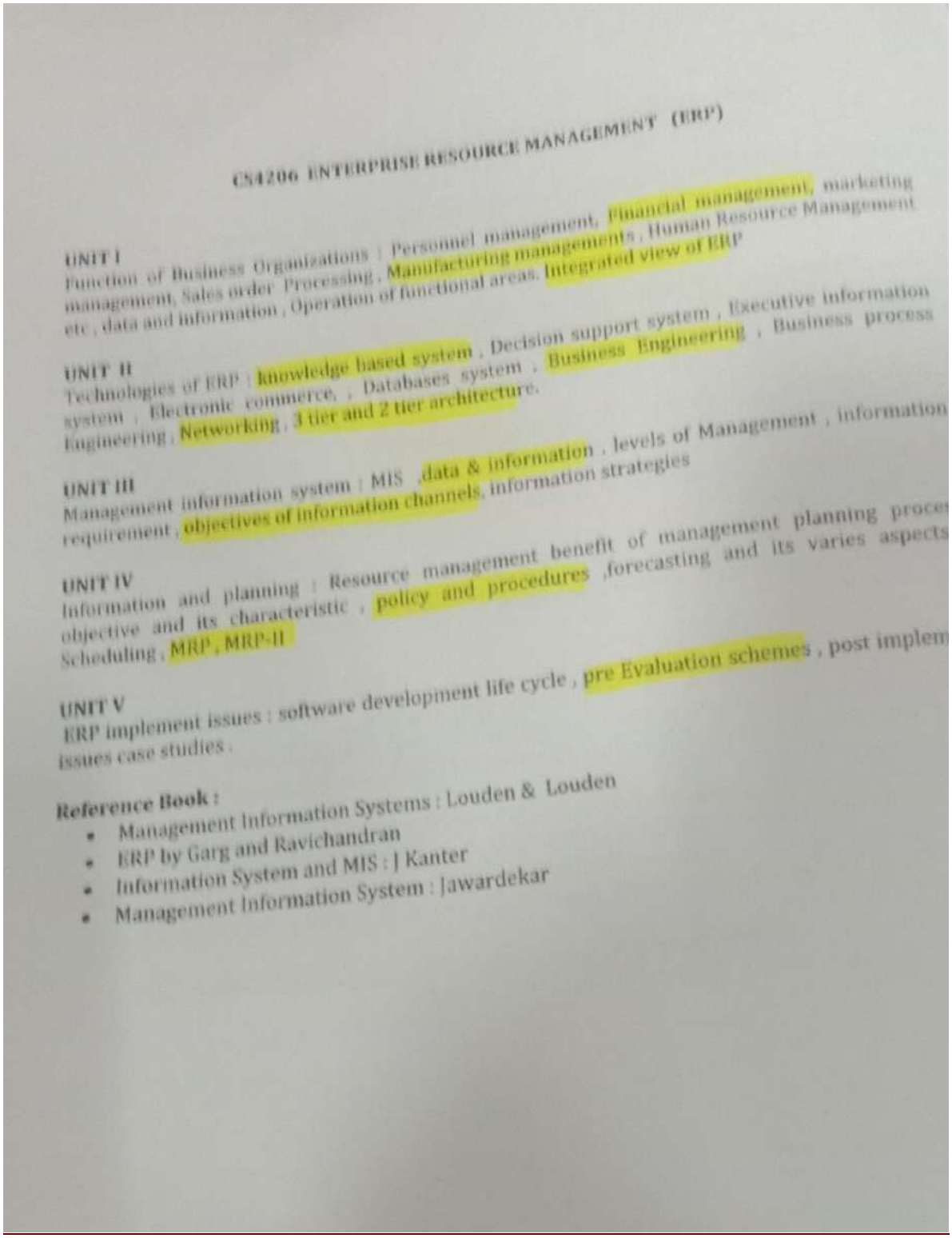
UNIT-III
Clustering Techniques:-
Introduction , clustering paradigms , partitioning algorithms, k-Medoid Algorithm, CLARA ,CLARANS , Hierarchial clustering , DBSCAN , BIRCH, CURE, Categorical clustering algorithms , STIRR, ROCK , CACTUS,

UNIT -IV
Decision Trees: - what is a Decision tree? Tree construction principal , Best spilt splitting indices, splitting criteria , Decision tree construction algorithm, CART, ID3, C4.5 , CHAID , Decision tree construction with presorting , rainforest, approximate method , CLOUDS, BOAT , pruning technique , integration of pruning & construction .

UNIT-V
What is neural network ? Learning in NN, unsupervised learning , data mining using NN , genetic algorithm ,Rough sets, Support Vector machines.
Web Mining :- Web mining ,web content mining ,web structure mining ,web usage mining ,text mining , unstructured text , Episode rule discovery for texts , Hierarchy of categories , text clustering .

Books & References :-

- Data Mining Techniques – Arun K Pujari Universities Press
- Data Mining Concepts & Techniques – Jiawei Han , Micheline Kamber Morgan Kaufmann Publisher Elsevier India
- Data Mining Methods For Knowledge Discovery –Cios , Pedrycz , Swiniarski Kluwer Academic Publishers London



CS4206 ENTERPRISE RESOURCE MANAGEMENT (ERP)

UNIT I
Function of Business Organizations : Personnel management, Financial management, marketing management, Sales order Processing , Manufacturing managements , Human Resource Management etc , data and information , Operation of functional areas. Integrated view of ERP

UNIT II
Technologies of ERP : knowledge based system , Decision support system , Executive information system , Electronic commerce, , Databases system , Business Engineering , Business process Engineering , Networking , 3 tier and 2 tier architecture.

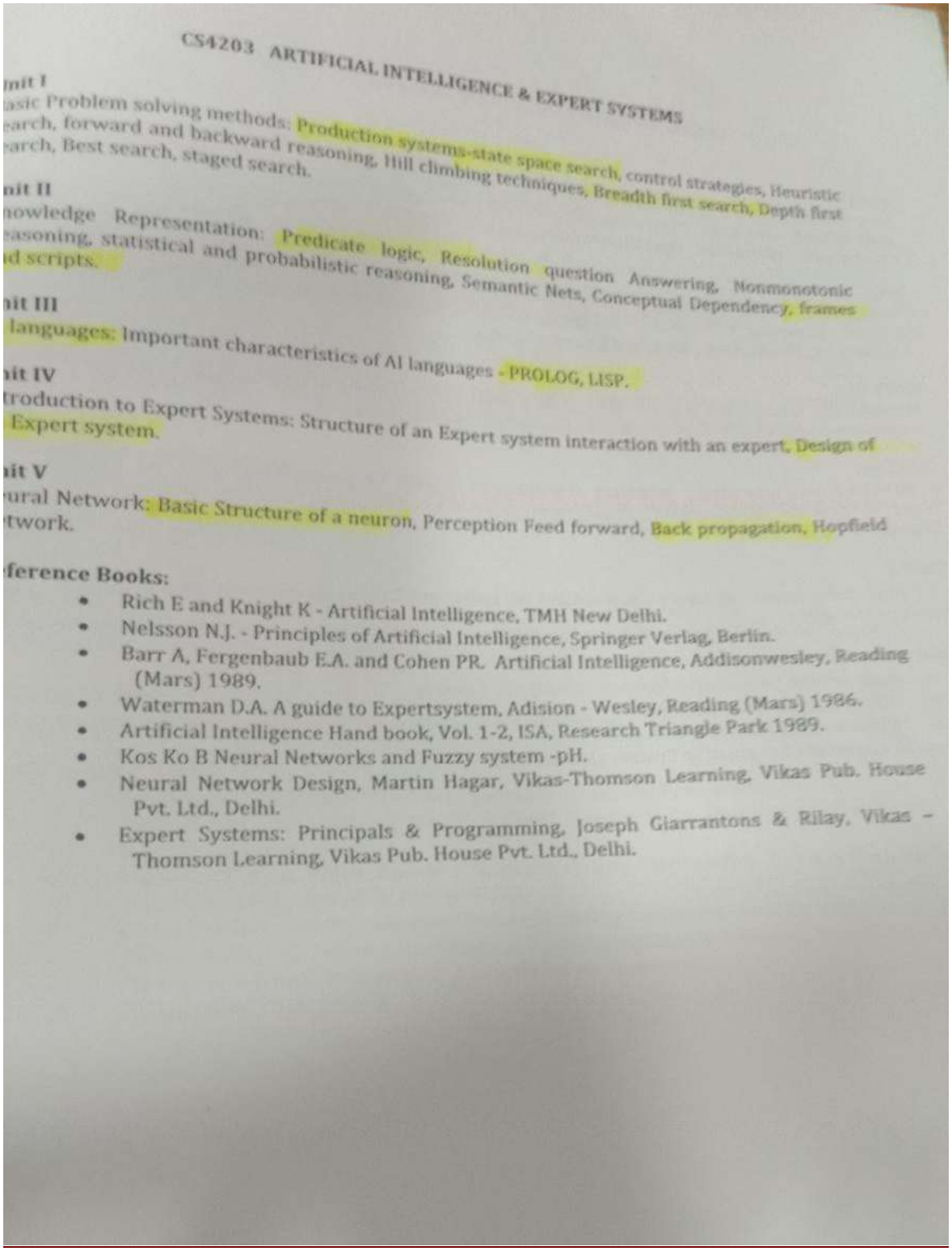
UNIT III
Management information system : MIS ,data & information , levels of Management , information requirement , objectives of information channels, information strategies

UNIT IV
Information and planning : Resource management benefit of management planning proces objective and its characteristic , policy and procedures ,forecasting and its varies aspects Scheduling , MRP , MRP-II

UNIT V
ERP implement issues : software development life cycle , pre Evaluation schemes , post implem issues case studies .

Reference Book :

- Management Information Systems : Louden & Louden
- ERP by Garg and Ravichandran
- Information System and MIS : J Kanter
- Management Information System : Jawardekar



CS4203 ARTIFICIAL INTELLIGENCE & EXPERT SYSTEMS

mit I
asic Problem solving methods: Production systems-state space search, control strategies, Heuristic earch, forward and backward reasoning, Hill climbing techniques, Breadth first search, Depth first earch, Best search, staged search.

nit II
nowledge Representation: Predicate logic, Resolution question Answering, Nonmonotonic easoning, statistical and probabilistic reasoning, Semantic Nets, Conceptual Dependency, frames d scripts.

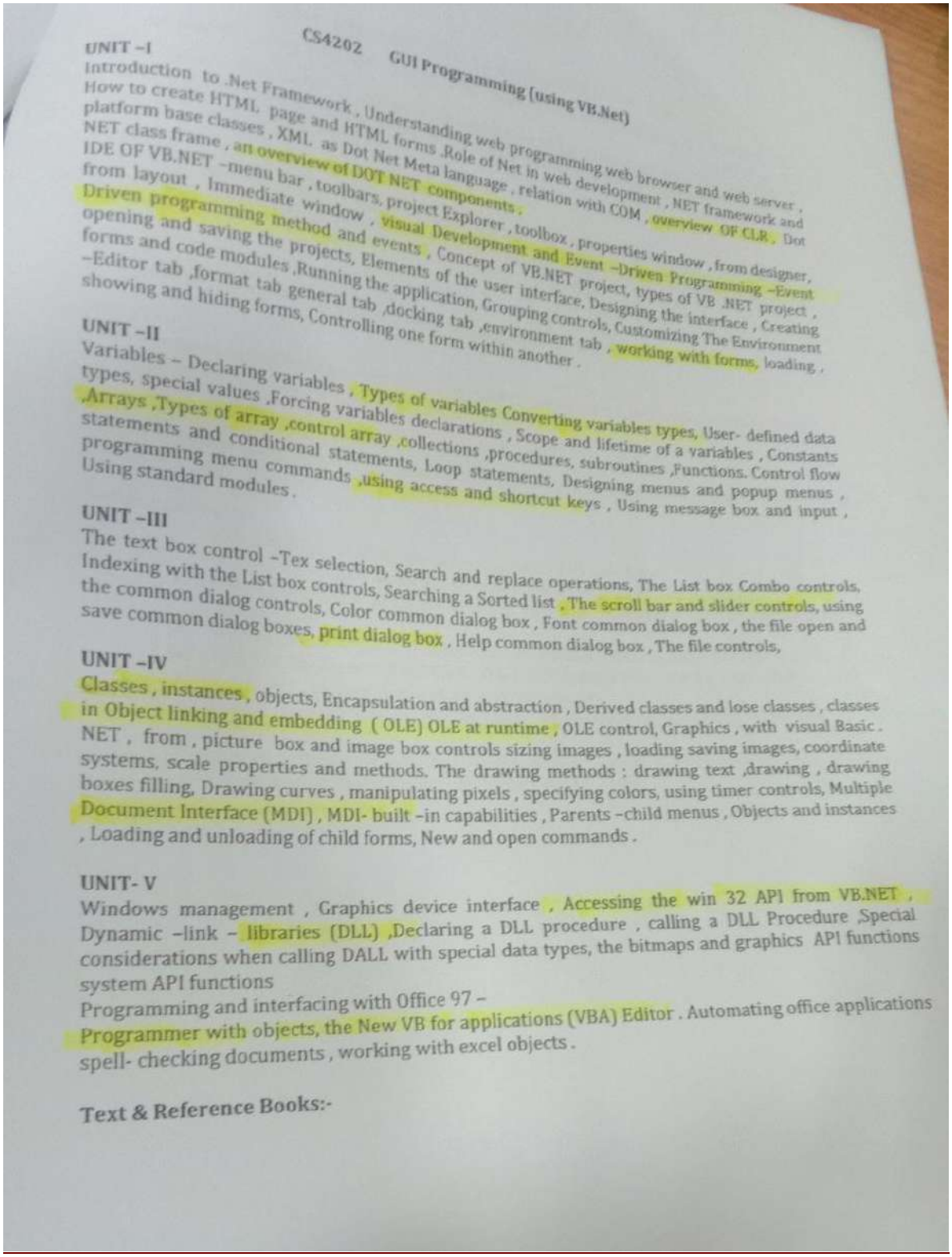
nit III
languages: Important characteristics of AI languages - PROLOG, LISP.

nit IV
troduction to Expert Systems: Structure of an Expert system interaction with an expert, Design of Expert system.

nit V
ural Network: Basic Structure of a neuron, Perception Feed forward, Back propagation, Hopfield twork.

ference Books:

- Rich E and Knight K - Artificial Intelligence, TMH New Delhi.
- Nelsson N.J. - Principles of Artificial Intelligence, Springer Verlag, Berlin.
- Barr A, Fergenbaub E.A. and Cohen PR. Artificial Intelligence, Addisonwesley, Reading (Mars) 1989.
- Waterman D.A. A guide to Expertsystem, Adision - Wesley, Reading (Mars) 1986.
- Artificial Intelligence Hand book, Vol. 1-2, ISA, Research Triangle Park 1989.
- Kos Ko B Neural Networks and Fuzzy system -pH.
- Neural Network Design, Martin Hagar, Vikas-Thomson Learning, Vikas Pub. House Pvt. Ltd., Delhi.
- Expert Systems: Principals & Programming, Joseph Giarrantons & Rilay, Vikas – Thomson Learning, Vikas Pub. House Pvt. Ltd., Delhi.



CS4202 GUI Programming (using VB.Net)

UNIT –I

Introduction to .Net Framework , Understanding web programming web browser and web server , How to create HTML page and HTML forms ,Role of Net in web development , NET framework and platform base classes , XML as Dot Net Meta language , relation with COM , overview OF CLR , Dot NET class frame , an overview of DOT NET components , IDE OF VB.NET –menu bar , toolbars, project Explorer , toolbox , properties window , from designer, from layout , Immediate window , visual Development and Event –Driven Programming –Event Driven programming method and events , Concept of VB.NET project, types of VB .NET project , opening and saving the projects, Elements of the user interface, Designing the interface , Creating forms and code modules ,Running the application, Grouping controls, Customizing The Environment –Editor tab ,format tab general tab ,docking tab ,environment tab , working with forms, loading , showing and hiding forms, Controlling one form within another .

UNIT –II

Variables – Declaring variables , Types of variables Converting variables types, User- defined data types, special values ,Forcing variables declarations , Scope and lifetime of a variables , Constants ,Arrays ,Types of array ,control array ,collections ,procedures, subroutines ,Functions. Control flow statements and conditional statements, Loop statements, Designing menus and popup menus , programming menu commands ,using access and shortcut keys , Using message box and input , Using standard modules .

UNIT –III

The text box control –Tex selection, Search and replace operations, The List box Combo controls, Indexing with the List box controls, Searching a Sorted list , The scroll bar and slider controls, using the common dialog controls, Color common dialog box , Font common dialog box , the file open and save common dialog boxes, print dialog box , Help common dialog box , The file controls,

UNIT –IV

Classes , instances , objects, Encapsulation and abstraction , Derived classes and lose classes , classes in Object linking and embedding (OLE) OLE at runtime , OLE control, Graphics , with visual Basic . NET , from , picture box and image box controls sizing images , loading saving images, coordinate systems, scale properties and methods. The drawing methods : drawing text ,drawing , drawing boxes filling, Drawing curves , manipulating pixels , specifying colors, using timer controls, Multiple Document Interface (MDI) , MDI- built –in capabilities , Parents –child menus , Objects and instances , Loading and unloading of child forms, New and open commands .

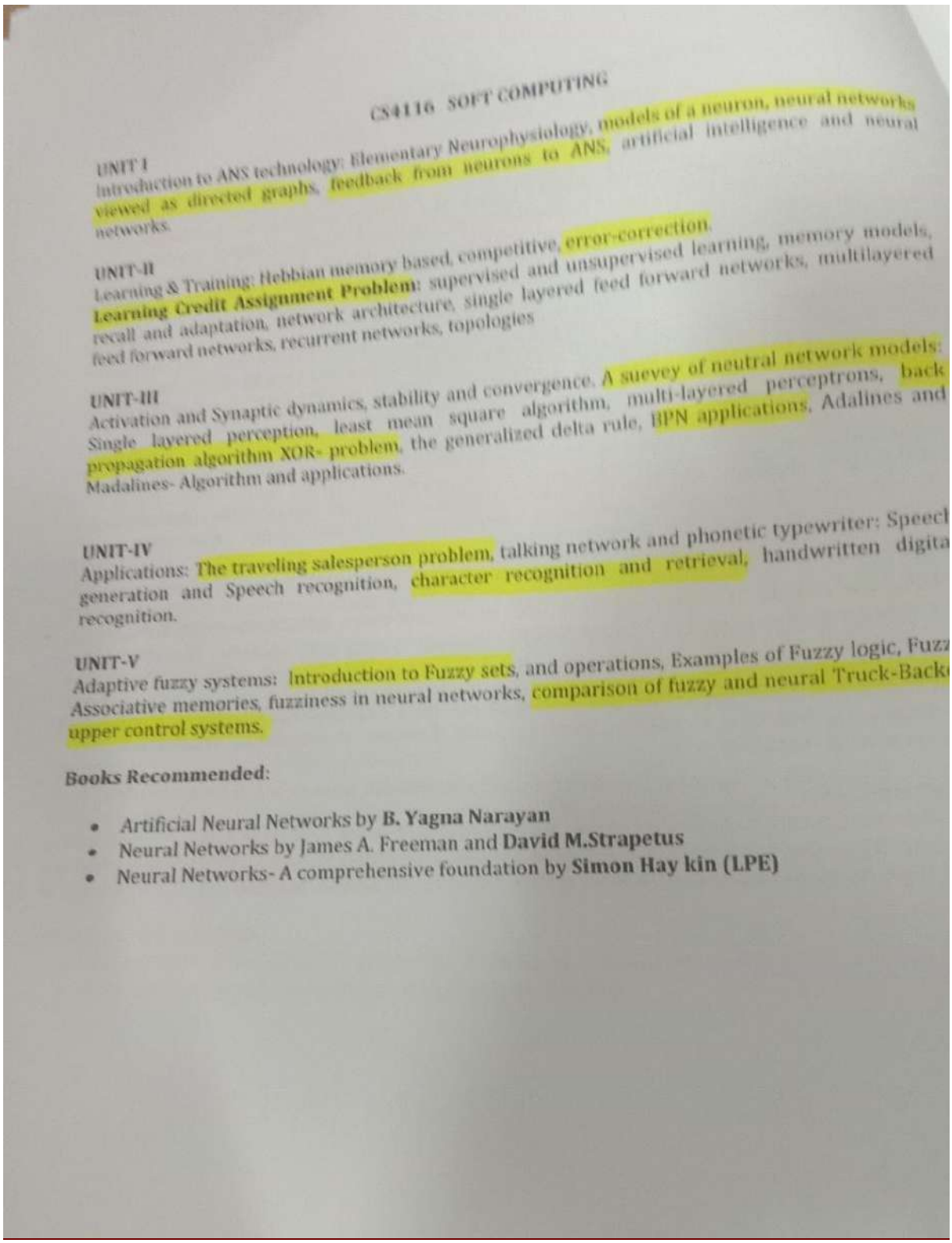
UNIT- V

Windows management , Graphics device interface , Accessing the win 32 API from VB.NET , Dynamic –link – libraries (DLL) ,Declaring a DLL procedure , calling a DLL Procedure ,Special considerations when calling DALL with special data types, the bitmaps and graphics API functions system API functions

Programming and interfacing with Office 97 –

Programmer with objects, the New VB for applications (VBA) Editor . Automating office applications spell- checking documents , working with excel objects .

Text & Reference Books:-



CS4116 SOFT COMPUTING

UNIT I
Introduction to ANS technology: Elementary Neurophysiology, models of a neuron, neural networks viewed as directed graphs, feedback from neurons to ANS, artificial intelligence and neural networks.

UNIT-II
Learning & Training: Hebbian memory based, competitive, error-correction.
Learning Credit Assignment Problem: supervised and unsupervised learning, memory models, recall and adaptation, network architecture, single layered feed forward networks, multilayered feed forward networks, recurrent networks, topologies

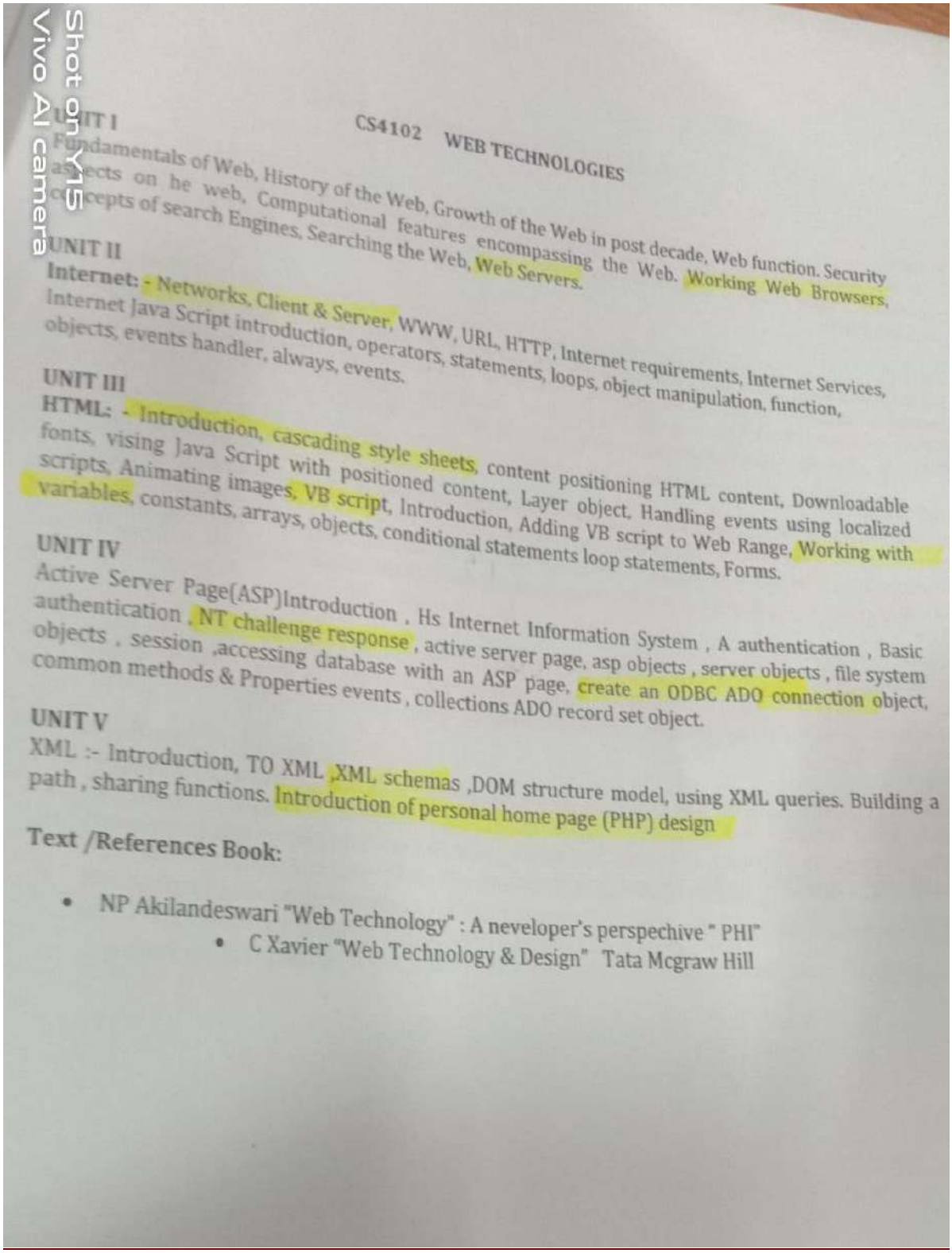
UNIT-III
Activation and Synaptic dynamics, stability and convergence. A suevey of neutral network models: Single layered perception, least mean square algorithm, multi-layered perceptrons, back propagation algorithm XOR- problem, the generalized delta rule, BPN applications, Adalines and Madalines- Algorithm and applications.

UNIT-IV
Applications: The traveling salesperson problem, talking network and phonetic typewriter: Speech generation and Speech recognition, character recognition and retrieval, handwritten digita recognition.

UNIT-V
Adaptive fuzzy systems: Introduction to Fuzzy sets, and operations, Examples of Fuzzy logic, Fuzz Associative memories, fuzziness in neural networks, comparison of fuzzy and neural Truck-Back upper control systems.

Books Recommended:

- Artificial Neural Networks by **B. Yagna Narayan**
- Neural Networks by James A. Freeman and **David M.Strapetus**
- Neural Networks- A comprehensive foundation by **Simon Hay kin (LPE)**



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Vivo AI camera

CS4102 WEB TECHNOLOGIES

UNIT I
Fundamentals of Web, History of the Web, Growth of the Web in post decade, Web function. Security aspects on he web, Computational features encompassing the Web. Working Web Browsers, concepts of search Engines, Searching the Web, Web Servers.

UNIT II
Internet: - Networks, Client & Server, WWW, URL, HTTP, Internet requirements, Internet Services, Internet Java Script introduction, operators, statements, loops, object manipulation, function, objects, events handler, always, events.

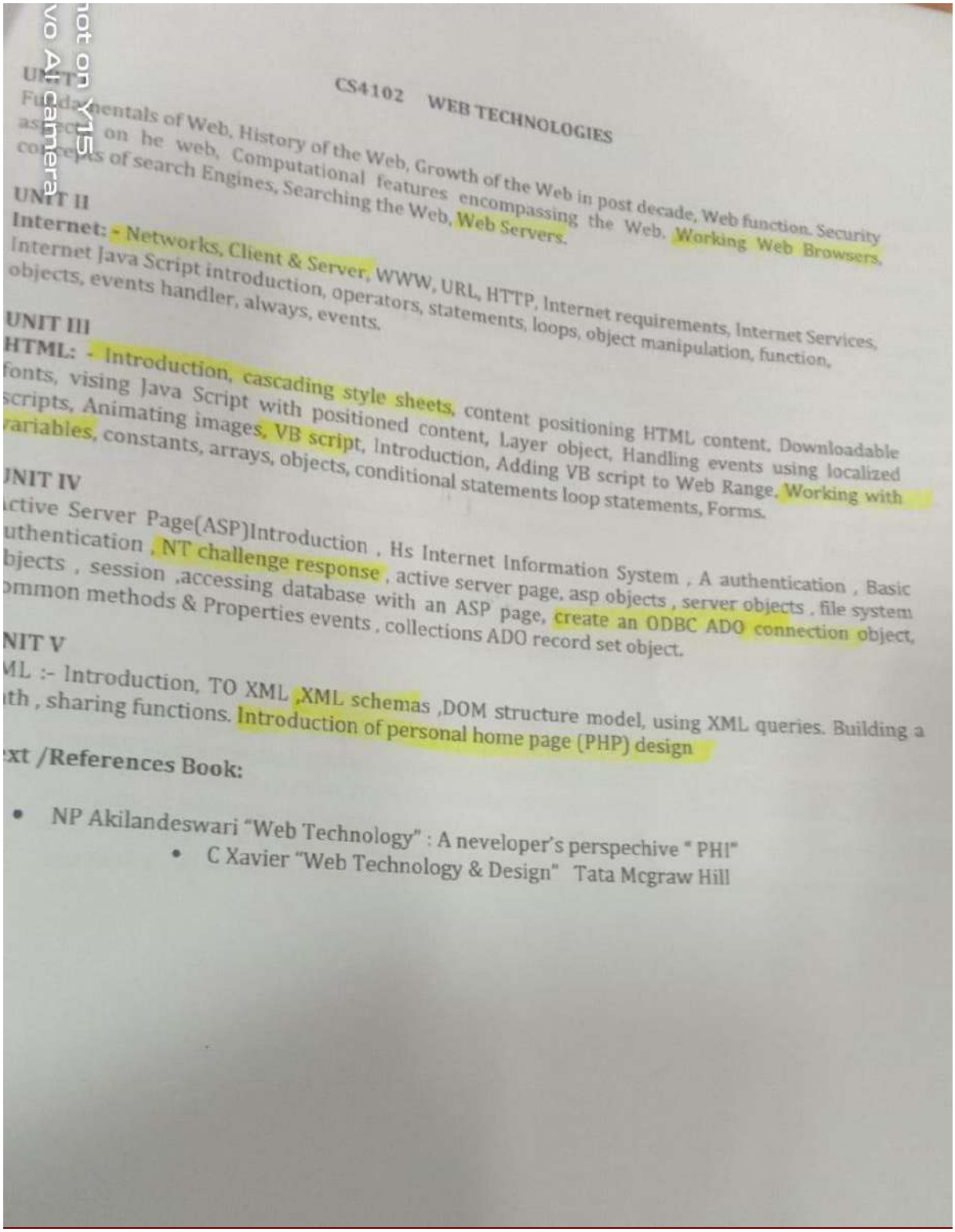
UNIT III
HTML: - Introduction, cascading style sheets, content positioning HTML content, Downloadable fonts, vising Java Script with positioned content, Layer object, Handling events using localized scripts, Animating images, VB script, Introduction, Adding VB script to Web Range, Working with variables, constants, arrays, objects, conditional statements loop statements, Forms.

UNIT IV
Active Server Page(ASP)Introduction , Hs Internet Information System , A authentication , Basic authentication , NT challenge response , active server page, asp objects , server objects , file system objects , session ,accessing database with an ASP page, create an ODBC ADO connection object, common methods & Properties events , collections ADO record set object.

UNIT V
XML :- Introduction, TO XML ,XML schemas ,DOM structure model, using XML queries. Building a path , sharing functions. Introduction of personal home page (PHP) design

Text /References Book:

- NP Akilandeswari "Web Technology" : A neveloper's perspechive " PHI"
- C Xavier "Web Technology & Design" Tata Mcgraw Hill



CS4102 WEB TECHNOLOGIES

UNIT I
Fundamentals of Web, History of the Web, Growth of the Web in post decade, Web function. Security aspects on he web, Computational features encompassing the Web. Working Web Browsers, concepts of search Engines, Searching the Web, Web Servers.

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Internet: - Networks, Client & Server, WWW, URL, HTTP, Internet requirements, Internet Services, Internet Java Script introduction, operators, statements, loops, object manipulation, function, objects, events handler, always, events.

UNIT III
HTML: - Introduction, cascading style sheets, content positioning HTML content, Downloadable fonts, vising Java Script with positioned content, Layer object, Handling events using localized scripts, Animating images, VB script, Introduction, Adding VB script to Web Range, Working with variables, constants, arrays, objects, conditional statements loop statements, Forms.

UNIT IV
Active Server Page(ASP)Introduction , Hs Internet Information System , A authentication , Basic authentication , NT challenge response , active server page, asp objects , server objects , file system objects , session ,accessing database with an ASP page, create an ODBC ADO connection object, common methods & Properties events , collections ADO record set object.

UNIT V
XML :- Introduction, TO XML ,XML schemas ,DOM structure model, using XML queries. Building a with , sharing functions. Introduction of personal home page (PHP) design

Text /References Book:

- NP Akilandeswari "Web Technology" : A neveloper's perspechive " PHI"
- C Xavier "Web Technology & Design" Tata Mcgraw Hill