

**E.M.G. YADAVA WOMEN'S COLLEGE, MADURAI – 625 014.**

*(An Autonomous Institution – Affiliated to Madurai Kamaraj University)*

Re-accredited **(3<sup>rd</sup> Cycle)** with Grade **A<sup>+</sup> & CGPA 3.51** by NAAC

## **DEPARTMENT OF COMMERCE**



**CBCS with OBE**

**MASTER OF COMMERCE  
(Computer Applications)**

**PROGRAMME CODE - OPD**

**COURSE STRUCTURE**

**(w.e.f. 2022 – 2023 Batch onwards)**



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## **CRITERION - I**

*1.2.2 Details of Programmes offered through Choice Based Credit System (CBCS) / Elective Course System*

**Syllabus copies with highlights of contents focusing on  
Elective Course System**



**To be Noted:**

HIGHLIGHTED	COURSE
<div></div>	Elective

## **E.M.G.YADAVA WOMEN'S COLLEGE, MADURAI-14**

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**CBCS with OBE**

### **DEPARTMENT OF COMMERCE – P.G**

**M.Com with Computer Applications**

**( w.e.f. 2022- 2023 Batch onwards)**

#### **VISION**

1. To empower the students with the knowledge and problem solving skills and make them to realize their potential and assure them to cope with the competitiveness globally.
2. To envision the Department of Commerce as an ICMA Centre with excellence and create more Chartered Accountants.

#### **MISSION**

1. To empower the students to become innovative entrepreneurs, to contribute to the success of business and betterment to the society.
2. To prepare students for higher education in Commerce, Management and Business studies.
3. To inculcate the use of information and communication technology in the Teaching Learning Process.
4. To establish internship with industry, business, professionals and government so as to enhance the experience and gain knowledge of the students.
5. To develop the students to become socially responsible and globally employable through our Course Structure.

#### **Programme Educational Objectives (PEOs)**

##### **M.Com (CA)**

<b>S.No</b>	<b>On completion of the Programme, the student will be able to</b>
PEO1	To become experts in Accounting Methodology and enhance Professionalism through innovative practices to be tactful to face unforeseen demand and change situational roles in industry and academics.
PEO2	Stimulate the student's capabilities towards innovation and creativity in problem solving skills in business modeling with societal impact.
PEO3	To adopt innovative opportunities, latest technologies and develop new businesses. Educate and to deal with the complex issues of the business community in particular and society at large.
PEO4	Communicate effectively by reading with insight, writing effective reports, speaking independently, listening to give effective response, and comprehending & designing in documentation.
PEO5	Uphold and improve the students' technical and managerial competencies through career and professional learning Viz., Chartered Accountants (CA), Cost & Management Accountants (CMA), Company Secretary (CS) and advanced degree programmes in the field of Commerce.
PEO6	Possess skills on management, leadership and team building among the group, enhanced with social responsibility and ethical values for shaping them as professionals and entrepreneurs

### Programme Outcomes (POs) with Graduate Attributes

Sl.No	Graduate Attributes	On completion of the Programme, the student will be able to
PO1	<b>Knowledge Base</b>	Empower the students through knowledge about the foundation of commerce. Inculcate the digital and technical advancements and reinforce them through the curriculum.
PO2	<b>Problem Analysis &amp; Investigation</b>	Attain practical exposure which would train the students to face the modern challenges and become self-reliant in the competitive society
PO3	<b>Communication Skills &amp; Design</b>	Gain thorough soft skills, mindset, communication skills, tools, attributes and various other leadership skills augmented during the degree.
PO4	<b>Individual and Team Work</b>	Become strong and stable by shaping their young minds with ethics, team work and emotional intelligence through education and academic activities.
PO5	<b>Professionalism, Ethics and equity</b>	Become competent and accessible to variety of career opportunities in both the public and private sectors in national and international grounds.
PO6	<b>Lifelong learning</b>	Preparation of students in excelling and perusal of their higher education. Become proficient and equipped in encountering competitive examinations of national and international

### Programme Specific Outcomes (PSOs) with Graduate Attributes

Sl.No	Graduate Attributes	On completion of the Programme, the student will be able to
PSO1	Knowledge Base	Knowledge about commerce, Accounting, Techniques of Business with marketing, Insurance, Banking Law and Practice and Latest Corporate Accounting Methods.
PSO2	Problem Analysis & Investigation	Students can become tax Consultants by knowing various issues on Taxation. Students will be able to interpret the financial position of a concern based on qualitative and quantitative accounting data of the business which helps in prediction and forecasting and enhances their management skills.
PSO3	Communication Skills & Design	Students learn the Decision Making skills through costing and Management Accounting Principles, creating Accounting software, computer educating and E-commerce principles.
PSO4	Individual and Team Work	To inculcate process of deriving an idea for creating of innovative products and putting forth the product into the market.
PSO5	Professionalism, Ethics and equity	To achieve the true impact of business through advertisement, salesmanship, auditing and entrepreneurial development.
PSO6	Lifelong learning	Face Competitive exams, learn CA, CS, ICWA, and become bank Tax consultant, bank employees, company secretary, teachers, professor, staff agent, government jobs and marketing managers.

### Eligibility for Admission

Pass in B.Com, or any other UG program considered as equivalent to B.Com., as per Tamil Nadu Government orders.

**Duration of the Course**

The students shall undergo prescribed course of study for the period of two academic years under CBCS semester pattern with Outcome Based Education.

**Medium of Instruction:** English

**System:** Choice Based Credit System with Outcome Based Education.

**Courses of Study with Credit Distribution**

Category	No. of Courses	No. of Credits
Core	16	64
Elective	4	16
Non Major Elective	2	4
Project	1	6
<b>Total</b>	<b>23</b>	<b>90</b>

**Nature of the Course**

Courses are classified according to the following nature

1. Knowledge & Skill
2. Employability Oriented
3. Entrepreneurship Oriented

**Outcome Based Education (OBE) & Assessment**

Students understanding must be built on and assessed for wide range of learning activities, which includes different approaches and are classified along several bases, such as

**1. Based on purpose:**

- Formative (Internal tests, Assignment, Seminar, Quiz, Documentation, Case lets, ICT based Assignment, Mini Projects administered during the learning process)
- Summative (Evaluation of students learning at the end of instructional unit)

**2. Based on Domain knowledge: (Post Graduate Up to K5 Levels)**

- Assessment through K1, K2, K3, K4 & K5

**Evaluation**

Continuous Internal Assessment Test	:25 marks
Summative Examination	:75 marks
<b>Total</b>	<b>: 100marks</b>

**Continuous Internal Assessment (CIA):25Marks**

Components	Marks
Test (Average of three tests) (Conduct for 150marksandconvertedinto15marks)	15
Assignment	5
Seminar	5
<b>Total</b>	<b>25</b>

- ✓ Centralized system of Internal Assessment Tests
- ✓ There will be three Internal Assessment tests
- ✓ Duration of I Internal Assessment test is 1 hours 30 Minutes and for II and III Assessments will be 2 hours 30 Minutes
- ✓ Students shall write retest on the genuine grounds if they are absent in either Test I or Test II or Test III with the approval of Head of the Department

**Question Paper Pattern for Continuous Internal Assessment Test I**

Section	Marks
A – Multiple Choice Questions (4x1 mark)	4
B–Short Answer (3x2 marks)	6
C –Either Or type(2/4 x5marks)	10
D –Open Choice type(1/2 x10Marks)	10
<b>Total</b>	<b>30</b>

**Question Paper Pattern for Continuous Internal Assessment Test II and Test III**

Section	Marks
A – Multiple Choice Question (8x1Mark)	8
B–Short Answer (6 x 2 marks)	12
C –Either Or type(4/8 x5marks)	20
D –Open Choice type(2/4 x 10Marks)	20
<b>Total</b>	<b>60</b>

**Question Paper Pattern for Summative Examination**

Section	Marks
A– Multiple Choice Questions without choice(10x1mark)	10
B– Short Answer Questions without choice (5x 2Marks)	10
C –Either Or type(5 X 5marks)	25
D–Open Choice type(3out of 5 X 10Marks)	30
<b>Total</b>	<b>75</b>

**Evaluation (Practical)**

Internal	:	40 Marks
External (Summative)	:	60 Marks
Total	:	100 Marks

Question Paper pattern for Internal Practical Examination: 40 Marks and External Practical Examination: 60 Marks

<b>Internal</b>	
<b>Components</b>	<b>Marks</b>
Major Question	20
Minor Question	10
Record Work	5
Program Explanation/VIVA	5
<b>Total</b>	<b>40</b>

<b>External</b>	
<b>Components</b>	<b>Marks</b>
Major Question	30
Minor Question	20
Record Work	5
Program Explanation/VIVA	5
<b>Total</b>	<b>60</b>

- In respect of external examinations passing minimum is 45% for Post Graduate Courses and in total, aggregate of 50%.

Latest amendments and Revisions as per UGC and TANSCHÉ Norms is taken into consideration in curriculum preparation.

**Distribution of Marks in % with K levels CIAI, II, III & External Assessment**

<b>Blooms Taxonomy</b>	<b>Internal Assessment</b>			<b>External Assessment</b>
	<b>I</b>	<b>II</b>	<b>III</b>	
Knowledge(K1)	8%	8%	8%	5%
Understanding(K2)	28%	12%	8%	14%
Apply(K3)	44%	40%	24%	27%
Analyze(K4)	20%	40%	40%	27%
Evaluate(K5)	-	-	20%	27%

Latest amendments and revision as per **UGC** and **TANSCHÉ** norms is taken into consideration in curriculum preparation.

**BLUE PRINT FOR INTERNAL ASSESSMENT- I**  
**Articulation Mapping –K Levels with Course Learning Outcomes**  
**(CLOs)**

Sl.No	CLOs	K-Level	Section A		Section B		Section C	Section D	Total
			MCQs (No Choice)		Short Answers (No Choice)		(Either or Type)	(Open Choice)	
			No. of Questions	K- Level	No. of Questions	K- Level			
1	CLO1	Up to K 4	2  2	K1  K2	1  1  1	K1  K2  K3	2(K2)  2(K3)  (Each set of questions must be in the same level)	1(K3)  1(K4)	
No. of Questions to be asked			4		3		4	2	13
No. of Questions to be answered			4		3		2	1	10
Marks for each question			1		2		5	10	
Total Marks for each section			4		6		20	20	50



**BLUE PRINT FOR INTERNAL ASSESSMENT-II**  
**Articulation Mapping –K levels with Course Learning Outcomes (CLOs)**

Sl.No	CLOs	K-Level	Section A		Section B		Section C	Section D	Total
			MCQs (No Choice)		Short Answers(No Choice)		(Either or Type)	(Open Choice)	
			No. of Questions	K-Level	No. of Questions	K-Level			
1	CLO2	Up to K 4	2 2	K1 K2	1 2	K1 K2	2(K3) 2(K4)	1(K3) 1(K4)	
2	CLO3	Up toK4	2 2	K1 K2	1 2	K1 K2	2(K3) 2(K4) (Each set of questions must be in the same level)	1(K3) 1(K4)	
No. of Questions to be asked			8		6		8	4	26
No. of Questions to Be answered			8		6		4	2	20
Marks for each question			1		2		5	10	
Total Marks for each section			8		12		40	40	100

**BLUEPRINT FOR INTERNAL ASSESSMENT – III**  
**Articulation Mapping –K Levels with Course Learning Outcomes (CLOs)**

Sl.No	CLOs	K-Level	Section A		Section B		Section C	Section D	Total
			MCQs (No Choice)		Short Answers(No Choice)		(Either or Type)	(Open Choice)	
			No. of Questions	K-Level	No. of Questions	K-Level			
1	CLO4	Upto K5	2 2	K1 K2	1 1 1	K1 K2 K3	2(K3) 2(K4)	1(K4) 1(K5)	
2	CLO5	Upto K5	2 2	K1 K2	1 1 1	K1 K2 K3	2(K3) 2(K4) (Each set of questions must be in the same level)	1(K4) 1(K5)	
No. of Questions to be asked			8		6		8	4	26
No. of Questions to be answered			8		6		4	2	20
Marks for each question			1		2		5	10	
Total Marks for each section			8		12		40	40	100

## Distribution of Marks with choice K Levels CIA I, CIA II and CIA III

<b>CIA</b>	<b>K Levels</b>	<b>Section-AMCQ (No choice)</b>	<b>Section –B Short Answer (No choice)</b>	<b>Section-C(Either or Type)</b>	<b>Section-D (Open Choice)</b>	<b>Total Marks</b>	<b>% of Marks</b>
<b>I</b>	K1	2	2			4	<b>8</b>
	K2	2	2	10	-	14	<b>28</b>
	K3		2	10	10	22	<b>44</b>
	K4				10	10	<b>20</b>
	<b>Marks</b>	<b>4</b>	<b>6</b>	<b>20</b>	<b>20</b>	<b>50</b>	<b>100</b>
<b>II</b>	K1	4	4			8	<b>8</b>
	K2	4	8			12	<b>12</b>
	K3			20	20	40	<b>40</b>
	K4			20	20	40	<b>40</b>
	<b>Marks</b>	<b>8</b>	<b>12</b>	<b>40</b>	<b>40</b>	<b>100</b>	<b>100</b>
<b>III</b>	K1	4	4			8	<b>8</b>
	K2	4	4			8	<b>8</b>
	K3		4	20		24	<b>24</b>
	K4			20	20	40	<b>40</b>
	K5				20	20	<b>20</b>
	<b>Marks</b>	<b>8</b>	<b>12</b>	<b>40</b>	<b>40</b>	<b>100</b>	<b>100</b>

### Articulation Mapping - K Levels with Course Learning Outcomes (CLOs) for Internal Assessment (IDC)

Sl. No	CLOs	K- Level	Section A		Section B		Section C	Section D	Total
			MCQs (No choice)		Short Answers (No choice)		(Either/or Type)	(open choice)	
			No. of Question s	K- Level	No. of Question s	K- Level			
1	CLO 1	Up to K4	2	K1			2(K3&K3)	1(K3)	
2	CLO 2	Up to K4	2	K1			2(K3&K3)	1(K4)	
3	CLO 3	Up to K4			2	K2	2(K4&K4)	1(K4)	
4	CLO 4	Up to K5			2	K2	2(K5&K5)	1(K5)	
5	CLO 5	Up to K5			2	K2		1(K5)	
No. of Questions to be asked			4		3		8	5	20
No. of Questions to be answered			4		3		4	2	13
Marks for each question			1		2		5	10	
Total Marks for each section			4		6		20	20	50 (Marks)

### Distribution of Section-wise Marks with K Levels for Internal Assessment (IDC)

K Levels	Section A (MCQ'S) (No choice)	Section B (Short Answer) (No choice)	Section C (Either or Type)	Section D (Open Choice)	Total Marks	% of Marks
K1	4				4	4
K2		6			6	6
K3			20	10	30	30
K4			10	20	30	30
K5			10	20	30	30
<b>Total Marks</b>	<b>4</b>	<b>6</b>	<b>40</b>	<b>50</b>	<b>100</b>	

K1- Remembering and recalling facts with specific answers.

K2- Basic understanding of facts and stating main ideas with general answers.

K3- Application oriented- Solving Problems, Justifying the statement and deriving Inferences.

K4- Examining, analyzing, presentation and make inferences with evidences.

K5- Evaluating, making Judgments based on criteria

**SUMMATIVE EXAMINATION-BLUEPRINT**  
**Articulation Mapping –K Levels with Course Learning Outcomes (CLOs) for**  
**External Assessment**

Sl. No	CLOs	K-Level	Section A		Section B		Section C	Section D	Total
			MCQs (No choice)		Short Answers(No choice)		(Either/or Type)	(open choice)	
			No. of Questions	K- Level	No. of Questions	K- Level			
1	CLO1	Upto K4	2	K1&K2	1	K1	2(K2&K2)	1(K3)	
2	CLO2	Upto K4	2	K1&K2	1	K2	2(K3&K3)	1(K4)	
3	CLO3	Upto K4	2	K1&K2	1	K3	2(K3&K3)	1(K4)	
4	CLO4	Upto K5	2	K1&K2	1	K4	2(K4 &K4)	1(K5)	
5	CLO5	Upto K5	2	K1&K2	1	K5	2(K5 &K5)	1(K5)	
No. of Questions to be asked			10		5		10	5	30
No. of Questions to be answered			10		5		5	3	23
Marks for each question			1		2		5	10	
Total Marks for each section			<b>10</b>		<b>10</b>		<b>25</b>	<b>30</b>	<b>75</b> (Marks)

**Distribution of Section-wise Marks with K Levels for External Assessment**

K Levels	Section A(MCQ'S) (No choice)	Section B(Short Answer) (No choice)	Section C(Either or Type)	Section D(Open Choice)	Total Marks	% of Marks
K1	5	2	-	-	7	5
K2	5	2	10	-	17	14
K3	-	2	20	10	32	27
K4	-	2	10	20	32	27
K5	-	2	10	20	32	27
<b>Total Marks</b>	<b>10</b>	<b>10</b>	<b>50</b>	<b>50</b>	<b>120</b>	<b>100</b>

K1-Remembering and recalling facts with specific answers.

K2-Basic understanding of facts and stating main ideas with general answers.

K3-Application oriented-Solving Problems, Justifying the statement and deriving Inferences.

K4- Examining, analyzing, presentation and make inferences with evidences.

K5-Evaluating, making judgments based on criteria.

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Semester	Category	Course Code	Title of the Course	Teaching hrs (Per Week)	Duration of Exam (hrs.)	Marks Allotted			Credits
						CIA	SE	Total	
I	Core	22OPCCA11	Research Methodology	6	3	25	75	100	4
	Core	22OPCCA12	Marketing Management	5	3	25	75	100	4
	Core	22OPCCA13	Advanced Corporate Accounting	6	3	25	75	100	4
	Core		<b>DSEC-I</b>	5	3	25	75	100	4
	Core	22OPCCA1P	Programming with C++ Lab	6	3	40	60	100	4
	IDC-I	22OPCCAID1	Internet and its Applications	2	3	25	75	100	2
II	Core	22OPCCA21	Advanced Business Statistics	6	3	25	75	100	4
	Core	22OPCCA22	Cost & Management Accounting	6	3	25	75	100	4
	Core	22OPCCA23	Human Resource Management	5	3	25	75	100	4
	Core		<b>DSEC-II</b>	5	3	25	75	100	4
	Core	22OPCCA2P	Web Designing Lab	6	3	40	60	100	4
	IDC-II	22OPCCAID2	Desk Top Publishing	2	3	25	75	100	2
III	Core	22OPCCA31	Financial Management	6	3	25	75	100	4
	Core	22OPCCA32	Business Management	6	3	25	75	100	4
	Core	22OPCCA33	Direct Taxes	6	3	25	75	100	4
	Core		<b>DSEC-III</b>	6	3	25	75	100	4
	Core	22OPCCA3P	Oracle Lab	6	3	40	60	100	4
IV	Core	22OPCCA41	Operations Research	6	3	25	75	100	4
	Core	22OPCCA4P	Computerized Accounting and Office Automation Lab	6	3	40	60	100	4
	Core	22OPCCA43	Indirect Taxes	6	3	25	75	100	4
	Core	22OPCCA44	Entrepreneurship Development	6	3	25	75	100	4
	Core		<b>DSEC-IV</b>	6	3	25	75	100	4
	Core	22OPCCAPR4	Project	-	3	20	80	100	6
			<b>Total</b>	<b>120</b>					<b>90</b>

**DSEC** – Discipline Specific Course

**IDC** - Inter Disciplinary Course

**Discipline Specific Elective Courses:**

**Semester I:**

**DSEC-I: (Choose any One)**

- |   |                |
|---|----------------|
| 1. Object Oriented Programming with C++ | - 22OPCCADSE1A |
| 2. Multimedia                           | - 22OPCCADSE1B |

**Semester II:**

**DSEC -II: (Choose any One)**

- |                                  |                |
|----------------------------------|----------------|
| 1. Web Designing                 | - 22OPCCADSE2A |
| 2. Management Information System | -22OPCCADSE2B  |

**Semester III:**

**DSEC -III: (Choose any One)**

- |                               |                |
|-------------------------------|----------------|
| 1. Database Management System | - 22OPCCADSE3A |
| 2. Computer Network           | -22OPCCADSE3B  |

**Semester IV:**

**DSEC -IV: (Choose any One)**

- |                                |               |
|--------------------------------|---------------|
| 1. Software Engineering        | -22OPCCADSE4A |
| 2. Software Project Management | -22OPCCADSE4B |

Department of Commerce					I M.Com(CA)			
Sem	Course Type	Course Code	Course Title	Credits	Contact Hours/week	CIA	Ext	Total
I	DSEC-I	22OPCCADSE1A	Object Oriented Programming with C++	4	5	25	75	100

Nature of Course		
Knowledge and Skill Oriented	Employability Oriented	Entrepreneurship oriented
✓	✓	

### Course Objectives

1. Learn the basic concepts of OOPs.
2. Create a simple program using classes and objects
3. Understand the containment and inheritance in Object Oriented Programming
4. Explain the concept of Constructors and Destructors.
5. Develop the fundamental programming methodologies in Virtual Function and Polymorphism.

Unit	Course Contents	Hours	K Level	CLO
I	Principles of OOP: Basic Concepts of OOPS – Benefits of OOP – Applications of OOP-Beginning with C++: What is C++? –A simple C++ program- Structure of C++ Program-Tokens, Expressions and Control Structures: Tokens-Keyw-ords-Identifiers and Constants -Basic Data types- User-defined data types-Derived data types – Declaration of Variables – Dynamic Initialization of variables – Operators in C++ - Scope resolution operators- Memory Management.	15	Up to K4	CLO1
II	Functions in C++: The Main Function - Function prototyping – Call by Reference - Return by Reference- Inline Function – Default Arguments – const Arguments – Recursion - Function overloading – Friend and Virtual Functions-Math Library Functions.	15	Up to K4	CLO2
III	Classes and Objects: Specifying a class –Defining member functions — private member function –Arrays within classes – memory Allocation for objects-Static data member –Static member function - Array of objects –Objects as function arguments- Friendly Function.	15	Up to K4	CLO3



IV	Constructors and Destructors: Constructors – Parameterized constructors – Multiple constructors in class – Constructors with default arguments – Copy constructors – Destructors-Inheritance: Defining Derived classes- Single Inheritance - Multilevel Inheritance – Multiple Inheritance – Hierarchical Inheritance- Hybrid Inheritance- Virtual base classes – Abstract Classes.	15	Up to K5	CLO4
V	Pointers, Virtual functions and Polymorphism: Pointers – Pointers to Objects – this Pointer – Pointers to Derived classes- Virtual functions – Pure Virtual Functions-Virtual constructors and destructors.	15	Up to K5	CLO5

**Book for Study:**

Balagurusamy.E(2019), *Object Oriented Programming with C++*, Fifth Edition, Tata McGraw Hill Publications New Delhi.

**Books for Reference:**

1. Ashok N.Kamthane(2018), *Object Oriented Programming with Ansi C & Turbo C++*, Pearson Education ,New Delhi.
2. John R.Hubbard (2017), *Programming with C++*, Tata McGraw Hill Publishing Company Private Limited , New Delhi.
3. Radha Ganesan.P(2018),*Programming with C++*, Scitech Publication Private Limited , Chennai.
4. Ravichandran.D(2017), *Programming with C++*, Tata McGraw Hill Publications, New Delhi.
5. Scott Meyers(2017). *Effective C++*, Tata Pearson Company Private Limited ,Third Edition, New Delhi.

**Web References:**

1. <https://www.cet.edu.in/>
2. <http://wavelino.coffeecup.com>
3. <https://fac.ksu.edu.sa/sites>
4. <http://people.cs.aau.dk/~torp/Teaching/E03/OOP/>

**E-Books:**

1. [https://www.google.co.in/books/edition/A\\_Complete\\_Guide\\_to\\_Programming\\_in\\_C++/-yhuY0Wg\\_QcC?hl=en&gbpv=1&dq=c%2B%2B+e+books&printsec=frontcover](https://www.google.co.in/books/edition/A_Complete_Guide_to_Programming_in_C++/-yhuY0Wg_QcC?hl=en&gbpv=1&dq=c%2B%2B+e+books&printsec=frontcover)
2. [https://www.google.co.in/books/edition/The\\_C++\\_Programming\\_Language/q7fomH9IOU8C?hl=en&gbpv=1&dq=c%2B%2B+e+books&printsec=frontcover](https://www.google.co.in/books/edition/The_C++_Programming_Language/q7fomH9IOU8C?hl=en&gbpv=1&dq=c%2B%2B+e+books&printsec=frontcover)

**Pedagogy :**

Chalk and Talk, Seminar, Oral Test Practical in Lab, Assignments.

**Rationale for Nature of Course:** Can be professionals by acquiring knowledge on C++ and able to create own Programming.

**Activities to be given**

1. Train the students to create their own C++ programs.
2. Assignments in important areas.

### Course Learning Outcome (CLOs)

On completion of the course, behind the students will be able to:

<b>CLOs</b>	<b>Course Learning Outcomes</b>	<b>Knowledge Level (According to Blooms Taxonomy)</b>
CLO1	Identify the basic concepts of object oriented programming	<b>Up to K4</b>
CLO2	Illustrate Functions, Classes and Objects works in object oriented programming	<b>Up to K4</b>
CLO3	Develop Programs by implementing Constructor, Destructor and Overloading Concepts.	<b>Up to K4</b>
CLO4	Demonstrate Inheritance concepts	<b>Up to K5</b>
CLO5	Infer the concept of Pointers, Polymorphism and Virtual Functions.	<b>Up to K5</b>

K1- Remembering facts with specific answers

K2- Basic understanding of facts.

K3- Application oriented

K4- Analyzing, examining and making presentations with evidences.

### Mapping of Course Learning Outcomes (CLOs) with Programme Outcomes (POs)

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>
<b>CLO 1</b>	1	2	2	2	3	3
<b>CLO 2</b>	2	2	2	2	3	2
<b>CLO 3</b>	3	3	3	2	2	2
<b>CLO 4</b>	3	3	2	3	3	2
<b>CLO 5</b>	2	2	3	3	2	2
	11	12	12	12	13	11

**1 - Basic Level**

**2- Intermediate Level**

**3-Advance Level**

### Lesson Plan

Unit	Course Contents	Hours	Mode of Teaching
<b>I</b>	Principles of OOP: Basic Concepts of OOPS – Benefits of OOP – Applications of OOP-Beginning with C++: What is C++? –A simple C++ program- Structure of C++ Program.	5	Chalk&Talk, PPTs,
	Tokens, Expressions and Control Structures: Tokens-Keywords-Identifiers and Constants -Basic Data types- User-defined data types-Derived data types – Declaration of Variables – Dynamic Initialization of variables – Operators in C++ - Scope resolution operators- Memory Management.	10	
<b>II</b>	Functions in C++: The Main Function - Function prototyping – Call by Reference - Return by Reference-Inline Function – Default Arguments – const Arguments	10	Chalk&Talk,
	Recursion - Function overloading – Friend and Virtual Functions-Math Library Functions.	5	
<b>III</b>	Classes and Objects: Specifying a class –Defining member functions — private member function –Arrays within classes – memory Allocation for objects.	10	Chalk&Talk, PPTs,
	Static data member –Static member function - Array of objects –Objects as function arguments- Friendly Function.	5	
<b>IV</b>	Constructors and Destructors: Constructors – Parameterized constructors – Multiple constructors in class – Constructors with default arguments – Copy constructors – Destructors-Inheritance: Defining Derived classes- Single Inheritance - Multilevel Inheritance – Multiple Inheritance – Hierarchical Inheritance- Hybrid Inheritance- Virtual base classes – Abstract Classes.	10	Chalk&Talk,
		5	
<b>V</b>	Pointers, Virtual functions and Polymorphism: Pointers – Pointers to Objects – this Pointer – Pointers to Derived classes.	10	Chalk&Talk,
	Virtual functions – Pure Virtual Functions-Virtual constructors and destructors.	5	

**Course Designer: Mrs.S.Chitradevi**

Department of Commerce					I M.Com(CA)			
Sem	Course Type	Course Code	Course Title	Credits	Contact Hours/ week	CIA	SE	Total
I	DSEC-II	22OPCCADSE1B	Multimedia	4	5	25	75	100

## Nature of the Course

Knowledge and Skill Oriented	Employability Oriented	Entrepreneurship oriented
✓	✓	

## Course Objective

1. Learn the basics concepts of Multimedia.
2. Explain the Multimedia components and Tools.
3. Develop the skills in multimedia techniques.
4. Learn all multimedia communication networks.
5. Understand integrated multimedia systems.

Unit	Course Contents	Hours	K Level	CLO
I	Multimedia in use: Introduction to multimedia - Element of Multimedia systems – Need for a Multimedia – system components – Converging technology – Functions and subsystems – Input - development – Output.	15	Up to K4	CLO1
II	Multimedia platforms: Personal Computer for Multimedia Today - Multimedia hardware – System software - development tools – Developing applications – Commercial tools – Authoring tools – Role of script .	15	Up to K4	CLO2
III	Image: Image and application – image capture – image compression – text conversion – Vectorisation – Image Compression – standards for encoding and compressing images – Audio – Audio Applications – Audio capture – Music on computer – voice on computer – Compression - standards - Video - Video applications – Video capture – compression and standards.	15	Up to K4	CLO3
IV	Storage system for multimedia: Magnetic media – Optical media – CD Specification - Communications - Local area Networks – New Options for Multimedia LAN's – Wide area Network – Cable and Broadcast Communications.	15	Up to K5	CLO4
V	Multimedia in the Real World: Multimedia and the single User – Multimedia on Networks – Multimedia in Training – Multimedia for Information and Sales – Point of Information Systems – Point of Sales Systems – Operational Systems – High Quality Imaging Systems.	15	Up to K5	CLO5

**Book for Study:**

Judith Jaffcoats ,*Multimedia in Practice Technology and applications* , Prentice Hall of India , New Delhi , Second Edition, 2003.

**Book for Reference:**

1. Prabhat K.Andleigh, *Multimedia System Design*, Publication private Limited, New Delhi, First Edition, 2020.
2. Fred Halsall, *Multimedia Communication, Applications, Networks, Protocols and Standards* , Pearson Education Private Limited, New Delhi, Third Edition, 2015.
3. Richard E.Mayer, *Multimedia Learning* by Richard E. Mayer, cambridge university press 2016
4. Ralf Stelnmetz and Klara Nahrstedt, *Multimedia Communications and Applications*, Dorling Kindersley Pvt Ltd, New Delhi, First Edition, 2015.

**Web References**

1. <https://www.oreilly.com/library/view/programming-computer-vision/9781449341916/ch01.html>
2. [https://www.researchgate.net/figure/A-raster-image-converted-to-a-piecewise-smooth-vector-based-representation-with\\_fig1\\_221890306](https://www.researchgate.net/figure/A-raster-image-converted-to-a-piecewise-smooth-vector-based-representation-with_fig1_221890306)
3. [https://www.tutorialspoint.com/multimedia/multimedia\\_introduction.htm](https://www.tutorialspoint.com/multimedia/multimedia_introduction.htm)
4. [http://engineering.futureuniversity.com/BOOKS%20FOR%20IT/DCAP303\\_MULTIMEDIA\\_SYSTEMS.pdf](http://engineering.futureuniversity.com/BOOKS%20FOR%20IT/DCAP303_MULTIMEDIA_SYSTEMS.pdf)

**E-Books:**

1. <https://books.google.co.in/books?hl=en&lr=&id=NRADCAAAQBAJ&oi=fnd&pg=PP12&dq=multimedia+tools+and+applications&ots=5zqa68kuZn&sig=MpvWNR2xpNN5vYAQ09CWwaniC9s>
2. [https://link.springer.com/chapter/10.1007/978-3-030-15887-3\\_1](https://link.springer.com/chapter/10.1007/978-3-030-15887-3_1)
3. <https://oer.avu.org/handle/123456789/687>

**Pedagogy:** Chalk & Talk, Assignment, Seminar.

**Rationale for nature of Course:** Can be professionals in Multimedia

**Activities to be given**

1. Allocate the students to practice Multimedia Tools
2. Train the students for applying tools in multimedia and presented in seminars.

**Course learning Outcome (CLOs)**

On completion of the course, behind the students will be able to:

<b>CLOs</b>	<b>Course Learning Outcomes</b>	<b>Knowledge Level (According to Blooms Taxonomy)</b>
CLO1	Learn the basics concepts of Multimedia.	Up to K4
CLO2	Identify the basic hardware and software requirements for multimedia development and playback.	Up to K4
CLO3	Assemble various media (audio, type, photographs, graphics and video) into a timeline.	Up to K4
CLO4	Understand the Storage system for multimedia	Up to K5
CLO5	Face Multimedia in the Real World using its information and systems.	Up to K5

K1- Remembering facts with specific answers

K2- Basic understanding of facts.

K3- Application oriented

K4- Analyzing, examining and making presentations with evidences.

**Mapping of Course Learning Outcomes (CLOs) with Programme Outcomes (Pos)**

	<b>PO 1</b>	<b>PO 2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>
<b>CLO1</b>	3	3	2	3	3	2
<b>CLO2</b>	2	3	2	2	3	2
<b>CLO3</b>	3	3	2	2	3	2
<b>CLO4</b>	3	3	3	2	2	1
<b>CLO5</b>	3	1	3	3	2	2

**1- Basic level**

**2-Intermediate level**

**3-Advance Level**

### Lesson Plan

Unit	Course Contents	Hours	Mode of Teaching
I	Multimedia in use: Introduction to multimedia - Element of Multimedia systems – Need for a Multimedia – system components – Converging technology – Functions and subsystems – Input - development – Output.	8 7	Chalk&Talk,
II	Multimedia platforms: Personal Computer for Multimedia Today - Multimedia hardware – System software - development tools – Developing applications – Commercial tools – Authoring tools – Role of script .	8 7	Chalk&Talk, seminar
III	Image: Image and application – image capture – image compression – text conversion – Vectorisation – Image Compression – standards for encoding and compressing images – Audio – Audio Applications – Audio capture – Music on computer – voice on computer – Compression - standards - Video - Video applications – Video capture – compression and standards.	8 7	Chalk&Talk,
IV	Storage system for multimedia: Magnetic media – Optical media – CD Specification - Communications - Local area Networks – New Options for Multimedia LAN's – Wide area Network – Cable and Broadcast Communications.	8 7	Chalk&Talk, seminar
V	Multimedia in the Real World: Multimedia and the single User – Multimedia on Networks – Multimedia in Training – Multimedia for Information and Sales – Point of Information Systems – Point of Sales Systems – Operational Systems – High Quality Imaging Systems.	8 7	Chalk &Talk, seminar

**Course Designer: Mrs.S.Niveethitha**

Department of Commerce					I M.Com(CA)			
Sem	Course Type	Course Code	Course Title	Credits	Contact Hours/week	CI A	SE	Total
II	DSEC-II	22OPCCADSE2A	Web Designing	4	5	25	75	100

## Nature of Course

Knowledge and Skill Oriented	Employability Oriented	Entrepreneurship oriented
✓		

## Course Objectives

1. Understand the concept of Internet and Protocols.
2. Identify the language of the web: HTML and CSS.
3. Develop basic programming skills using Java script.
4. Learn the concept of XML and DTD in detail.
5. Develop skills in analyzing the usability of a web site.

Unit	Course Contents	Hours	K level	CLO
I	Introduction: What is the Internet-History of the Internet – Internet Service and Accessibility-Uses of the Internet-Web Concepts. Internet Protocols: Introduction – Internet Protocols – Host Names- Internet Applications and Application Protocols.	15	Up to K4	CLO 1
II	HTML: Introduction-SGML-Outline of an HTML document-Head Section-Body section-HTML Forms.	15	Up to K4	CLO 2
III	Java Script: Introduction – Language Elements – Objects of JavaScript – Other Objects – Arrays.	15	Up to K4	CLO 3
IV	DHTML: Introduction-Cascading Style Sheet-DHTML document object model and Collections-Event handling-Filters and Transitions-Data Binding.	15	Up to K5	CLO 4
V	XML: Introduction-HTML Vs XML-Syntax of the XML document – XML Attributes-XML Validation-XML DTD-DTD Elements-DTD Attributes-DTD Entities-DTD Validation-XSL-XML Namespace-XML Schema.	15	Up to K5	CLO 5

## Book for Study:

Gopalan.N.P, Akilandeswari.J(2017), *Web Technology A Developer's Perspective*, PHI Learning Private Limited, New Delhi.

## Book for Reference:



1. Alexis Leon and Mathews Leon(2016), *Internet for Everyone*, UBS Publishers and Distributors, Chennai.
2. Chris Bates(2016), *Web Programming-Building Internet Applications*, III Edition, Wiley-India, New Delhi.
3. Daniel Minots&EmmaMinots(2015) ,*Web Commerce Technology Hand books*, Tata MC- Graw Hill Publications, New Delhi.
4. Harley Hahn(2016), *The Internet Complete Reference*, Tata McGraw Hill Publications, New Delhi.
5. Raj Kamal(2017), *Internet and Web Technologies*. Tata Mc Graw Hill Education Pvt. Ltd, New Delh.

#### Web References :

1. <http://mpbou.edu.in/slm/webdeenglish.pdf>
2. [http://www.itdesk.info/Web\\_design-handbook.pdf](http://www.itdesk.info/Web_design-handbook.pdf)
3. <http://www.2createawebsite.com/ebook/websitetutorial.pdf>
4. [https://cat.xula.edu/tutorials/html/tutorial/html\\_tutorial.pdf](https://cat.xula.edu/tutorials/html/tutorial/html_tutorial.pdf)

#### E-Books:

1. <https://si.sari-mutiara.ac.id/download/file/web-design-with-html-and-css-digital-classroom.pdf>
2. <https://freepdf-books.com/web-designing/>
3. <https://www.programming-book.com/web-designing/>
4. <https://www.journaldev.com/301/web-designing-tutorial-pdf-free-download>

**Pedagogy:** Chalk & Talk, Assignment, Seminar

**Rationale for Nature of Course:** Become familiar with graphic design principles that relate to web design and learn how to implement theories into practice.

#### Activities to be given

1. Train the students to create their own Website.
2. Assignments in important areas.

**Course Learning Outcomes (CLO):**

On Completion of the course, behind the students would be able to:

<b>CLO</b>	<b>Course Learning Outcomes</b>	<b>Knowledge</b>
CLO1	Understand to the Basic Concepts Internet	<b>Up to K4</b>
CLO2	Be able to use the HTML programming language and Runs the page he/she has designed using HTML codes.	<b>Up to K4</b>
CLO3	Equip basic JavaScript.	<b>Up to K4</b>
CLO4	Develop CSS effectively to create well organized, styled web page using DHTML	<b>Up to K5</b>
CLO5	Learn the basics of creating XML documents, transforming XML documents, and validating XML documents	<b>Up to K5</b>

K1- Remembering facts with specific answers

K2- Basic understanding of facts.

K3- Application oriented

K4- Analyzing, examining and making presentations with evidences.

**Mapping of Course Learning Outcomes (CLOs) with Programme Outcomes (POs)**

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>
<b>CLO 1</b>	1	2	2	2	3	3
<b>CLO 2</b>	2	3	2	2	3	2
<b>CLO 3</b>	3	3	3	3	2	3
<b>CLO 4</b>	3	3	2	3	3	2
<b>CLO 5</b>	3	2	3	3	3	2

**1 - Basic Level**

**2- Intermediate Level**

**3-Advanced Level**

### Lesson Plan

Unit	Course Contents	Hours	Mode of Teaching
<b>I</b>	Introduction: What is the Internet-History of the Internet – Internet Service and Accessibility-Uses of the Internet-Web Concepts. Internet Protocols: Introduction – Internet Protocols –Host Names- Internet Applications and Application Protocols.	15	Chalk & Talk, PPTs,
<b>II</b>	HTML: Introduction-SGML-Outline of an HTML document-Head Section-Body section-HTML Forms.	15	Chalk & Talk, PPTs,
<b>III</b>	Java Script: Introduction – Language Elements – Objects of JavaScript – Other Objects – Arrays.	15	Chalk & Talk,
<b>IV</b>	DHTML: Introduction-Cascading Style Sheet-DHTML document object model and Collections-Event handling-Filters and Transitions-Data Binding.	15	Chalk & Talk,
<b>V</b>	XML: Introduction-HTML Vs XML-Syntax of the XML document – XML Attributes-XML Validation-XML DTD-DTD Elements-DTD Attributes-DTD Entities-DTD Validation-XSL-XML Namespace-XML Schema.	15	Chalk &Talk,

**Course Designer: Mrs.M.Sharmiladevi**

Department of Commerce					I M.Com(CA)			
Sem	Course Type	Course Code	Course Title	Credits	Contact Hours/ week	CIA	SE	Total
II	DSEC-II	22OPCCADSE2B	Management Information System	4	5	25	75	100

## Nature of Course

Knowledge and Skill Oriented	Employability Oriented	Entrepreneurship oriented
✓		

## Course Objective

1. Understand the Importance of Management Information System.
2. Study the benefits and limitations of the steps and deliverables used in information Systems projects.
3. Learn the various concepts hardware and software technologies.
4. Identify the theoretical models used for System Development Approaches.
5. Learn the concept of Decision Making and Support system.

Unit	Course Contents	Hours	K Level	CLO
I	MIS A Framework: Importance of MIS – MIS: A Concept – MIS: A Definition – Nature and Scope of MIS. Structure and Classification of MIS: Structure of MIS – MIS Classification.	15	Up to K4	CLO1
II	Information and System Concepts: Information: A Definition – Types of Information – Information Quality – Dimensions of Information – System: A Definition – Kinds of Systems – System Related Concepts – Elements of a System – Human as an Information Processing System.	15	Up to K4	CLO2
III	Basics of Computer System: Computer System – Computer Hardware Classification – Computer Software – Programming Languages. Database Management: Introduction – Database Hierarchy – Files – Database – DB Structure – DB Management System – Types – SQL – Normalization.	15	Up to K4	CLO3
IV	Telecommunications and Networks: Telecommunications – Types of signals – Communication channel – Characteristics of Communication Channels – Communication Hardware – Communication network – Applications of Communication.	15	Up to K5	CLO4
V	Decision Making and Decision-Support Systems: concept – Simon's Model – Types – Decision-Making and MIS – DSS – A Framework – Characteristics and Capabilities of DSS. System Development Approaches: System Development Stages – System Development Approaches.	15	Up to K5	CLO5

**Book for Study**

Goyal.D.P(2019) , *Management Information Systems, Managerial Perspectives*, Rajiv Beri for Macmilian India Ltd , New Delhi , Second Edition.

**Books for Reference**

1. Dharminderkumar& Sangeeta Gupta(2017) ,*Management Information System* , Tata McGraw Hill Education Private Limited, New Delhi, Special Indian Edition.
2. Gordon B. Davis & Margrethe H. Olson(2018), *Management Information System*, Tata McGraw Hill International, New Delhi, Second Edition.
3. James.A O'Brien, George M Marakas& Ramesh Behl(2017), *Management Information System* Tata McGraw Hill Education Private Limited, New Delhi, Special Indian Edition.
4. Jawadekar.W.S(2014), *Management Information System*, Tata McGraw Hill Publishing Company Private Limited, New Delhi, Second Edition.
5. Shivani Joshi(2018), *Management Information System*, Mehra Offset Press, New Delhi, First Edition.

**Web References**

1. <https://www.accaglobal.com/gb/en/student/exam-support-resources/fundamentals-exams-study-resources/f5/technical-articles/info-systems.html>
2. [https://www.tutorialspoint.com/management\\_information\\_system/management\\_information\\_system.htm](https://www.tutorialspoint.com/management_information_system/management_information_system.htm)
3. [https://nitsri.ac.in/Department/Electronics%20&%20Communication%20Engineering/MIS-Notes\\_New\\_word.pdf](https://nitsri.ac.in/Department/Electronics%20&%20Communication%20Engineering/MIS-Notes_New_word.pdf)

**E-Books:**

1. <http://www.microlinkcolleges.net/elib/files/undergraduate/Management%20Information%20System/Management%20Information%20System.pdf>
2. [https://repository.dinus.ac.id/docs/ajar/Kenneth\\_C.Laudon,Jane\\_P\\_.Laudon\\_-\\_Management\\_Information\\_Sysrem\\_13th\\_Edition\\_.pdf](https://repository.dinus.ac.id/docs/ajar/Kenneth_C.Laudon,Jane_P_.Laudon_-_Management_Information_Sysrem_13th_Edition_.pdf)

**Pedagogy**

Power point presentations, Assignment, Seminar.

**Rationale for nature of Course:** Complete knowledge on Management Information System.

**Activities to be given**

1. Make the students to do assignments based on Information and System Concepts.
2. Design Power point presentation on Decision Making and Decision-Support Systems

### Course Learning Outcomes (CLOs)

On completion of the course, behind the students would be able to:

<b>CLOs</b>	<b>On completion of the course the students should be able to</b>	<b>K-level</b>
CLO1	To understand the importance of information system for all management levels by describing the differences between various types of information systems.	<b>Up to K4</b>
CLO2	Gain the knowledge of Types of Information System and Elements of System	<b>Up to K4</b>
CLO3	Recognize and evaluate linkages between end - user requirements and underlying hardware and software technologies.	<b>Up to K4</b>
CLO4	Describe the advances in networking, data communications and the Internet	<b>Up to K5</b>
CLO5	Explain the benefits and limitations of the steps and deliverables used in information systems projects	<b>Up to K5</b>

K1- Remembering facts with specific answers

K2- Basic understanding of facts.

K3- Application oriented

K4- Analyzing, examining and making presentations with evidences.

### Mapping of Course Learning Outcomes (CLOs) with Programme Outcomes (Pos)

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>
<b>CO 1</b>	2	3	2	2	3	3
<b>CO 2</b>	2	2	3	2	3	2
<b>CO 3</b>	3	3	3	2	2	2
<b>CO 4</b>	3	2	2	3	3	3
<b>CO 5</b>	2	2	3	3	2	2

**1 - Basic Level**

**2- Intermediate Level**

**3-Advance Level**

### Lesson Plan

Unit	Course Contents	Hours	Mode of Teaching
I	MIS A Framework: Importance of MIS – MIS: A Concept – MIS: A Definition – Nature and Scope of MIS. Structure and Classification of MIS: Structure of MIS – MIS Classification.	8 7	Chalk & Talk, PPTs,
II	Information and System Concepts: Information: A Definition – Types of Information – Information Quality – Dimensions of Information – System: A Definition – Kinds of Systems – System Related Concepts – Elements of a System – Human as an Information Processing System.	8 7	Chalk & Talk,
III	Basics of Computer System: Computer System – Computer Hardware Classification – Computer Software – Programming Languages. Database Management: Introduction – Database Hierarchy – Files – Database – DB Structure – DB Management System – Types – SQL – Normalization.	8 7	Chalk & Talk,
IV	Telecommunications and Networks: Telecommunications – Types of signals – Communication channel – Characteristics of Communication Channels – Communication Hardware – Communication network – Applications of Communication.	8 7	Chalk & Talk, PPTs,
V	Decision Making and Decision-Support Systems: concept – Simon's Model – Types – Decision-Making and MIS – DSS – A Framework – Characteristics and Capabilities of DSS. System Development Approaches: System Development Stages – System Development Approaches.	8 7	Chalk& Talk,

**Course Designer : Mrs.A.Josephine**