# Govt. Digvijay Autonomous PG College Rajnandgaon(CG)



# SCHEME OF EXAMINATION & SYLLABUS

**FOR** 

THE FOUR-YEAR UNDERGRADUATE PROGRAMME (FYUGP)

BACHELOR OF COMPUTER APPLICATION (BCA- 3™& 4™) SEMESTER EXAM

UNDER

DEPARTMENT OF COMPUTER APPLICATION

SESSION - 2025-26

(APPROVED BY BOARD OF STUDIES)

# Govt. Digvijay Autonomous PG College , Rajnandgaon(CG)

## **Department of Computer Application**

Session – 2025 -26

### List of Members of Board of Studies (BOS)

S.No	Name of Member	Nominee Type	Signature
1	Mrs. Hempushpa	Chairman	TC-W.
2	Dr. Durga Prasad Rao	VC Nominee	
3	Prof. Gulame Mustafa Ansari	Principal Nominee	(Amari
4	Prof. Shailendra Arya	Principal Nominee	<del>_</del>
5	Mr. Anshu Ramteke	Adviser Member	
6	Ms. Nadini sahu	Ex-Student	

# SYLLABUS AND MARKING SCHEME

## Session - 2025-26

### BCA- III Semester

•			C. H. L. and	Credit	Theory	Internal	Total N	larks
S N o	Course Type	Course-code	Subject		Marks	Marks	Max	Min
U					70	30	100	40
1	DSC	CASC - 07	Software engineering	4			100	40
2		CASC - 08 T	Relational database Management system	3	70	30		
		CASC - 08 P	Lab 5 : Relational database Management system	1	35	15	50	20
3		CASC - 09 T	(Oracle/My SQL) Programming in java	3	70	30	100	40
4		CASC - 09 P	Lab 6 : Programming in java	1	35	15	50	20
5	DSE	CASE - 01	Cyber security and cyber Law	4	70	30	100	40
T.	)TAL			20	-	-	600	a <del>-</del>

### **BCA-IV Semester**

_	Course Course-code Subject		Credit	Theory	Interna	Total Marks		
S N	Type	Course-code	Subject		Marks	Marks	Max	Min
0		6166 10	The arm of computation	4	70	30	100	40
2	DSC	CASC - 10 CASC - 11 T	Theory of computation Web Technology	3	70	30	100	40
2		CASC - 11 P	Lab 7 : Web Technology	1	35	15	50	20
3		CASC - 12 T	Python programming	3	70	30	100	40
4		CASC – 12 P	Lab 8 : Python programming	1	35	15	50	20
5	DSE	CASE - 02	Artificial Intelligence and expert system	4	70	30	100	40
6								
7								
T	OTAL			20	-	-	600	-

DSC- Discipline Specific Course,

**DSE- Discipline Specific Elective** 

AEC-Ability Enhancement Core Course,

SEC-Skill Enhancement Course,

GE- Generic Elective,

VAC- Value Added course

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### GOVT. DIGVIJAY AUTONOMOUS PG COLLEGE, RAJNANDGAON.

### (SEMESTER-III & IV)

### Program Objective(PO)

- Pol- To learn the importance of DBMS in the present scenario and about DBMS architecture, SQL to interact with database.
- Po2- To provide a professionally guided education in software engineering that prepares agility in solving software
- Po3- To provide a comprehensive understanding of Java programming, preparing students for real-world software development challenges.
- Po4 To provide students with a foundational understanding of computational models and their limitations.
- Po5- Primary objectives of Cyber security focuses on protecting systems, networks, and data from cyber threats.
- PO6- understanding of the fundamentals of the Internet, World Wide Web, and web design principles.
- PO7- To introduce students to the syntax and semantics of Python, enabling them to write and execute Python scripts effectively.
- PO8- To impart foundational knowledge about Artificial Intelligence (AI), including its concepts, history, and various subfields such as machine learning, neural networks, and natural language processing.

# Program Specific Outcome (PSO)

- PSO1-Student able to learn about the database concept, Architecture, various users data model and data management
- PSO2- Student should be able to Create user defined class interface and packages which help them to develop new application software and utility software
- PSO3- Understand the fundamental concepts in cyber security and distinguish among the attacks, threats and vulnerabilities.
- PSO4- Understanding and analyzing the fundamentals of compiler designing.
- PSO5- Create a web page using HTML, CSS, JAVASCRIPT, XHTML.
- PSO6- Understand the Programming Logics in Artificial Intelligence.
- PSO7- In python programming, Determine the need for scraping websites and working with CSV, JSON and other file format.

& Comai Talk

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Pr	ogra	a <mark>m:</mark> Bachelor in Co	mputer Application	n	C			
		cate / Diploma / De			Semester -III	Session: 2024-2	025	
1		urse Code	CASC-07	to have the second of the second		73	\ P	
2	Co	urse Title	Software Engin	eering	and a feeding of the state of	Constitution of the consti		
	Co	urse Type	Type DSC (Discipline Specific Course)					
1		re-requisite As per program						
At the end of this course, the students will be able:								
	<ul> <li>Understand the fundamentals of software Engineering.</li> </ul>							
		urse Learning	•	•	requirement of syste			
	Ou	itcomes (CLO)		_		d Design the proposed	System.	
					entals of Software pro d perform System tes			
					•	for new system develop	ment.	
,	Cr	edit Value	4 Credits			ing & Observation		
	To	tal Marks	Max. Marks:	100		Passing Marks: 40	)	
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		software, Evolution	tion of Software Engineering, Characteristics of software. SDLC Introduction,					
		Incremental develor	Models: Waterfall	Models: Waterfall Model, V-model, Prototype model, RAD model,				
J	Ī	Incremental development model, Spiral Model, Evolutionary Model, RAD Model, Agile model.  2 Requirements engineering process: Requirement Gathering and Analysis, Feasibility studies, requirements validation, requirements management. Functional and Non-Functional						
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Text Books, Reference Books and Others

### Text Books Recommended:

- Rajib Mall, Fundamentals of Software Engineering, 5th ed, PHI publication.
- Roger S. Pressman, Software Engineering, A practitioner's Approach, 6th edition, McGraw Hill International Edition.

### Reference Books Recommended:

- Sommerville, Software Engineering, 7th edition, Pearson Education.
- James Rumbaugh, Ivar Jacobson, The unified modelling language user guide Grady Booch, Pearson Education.

### Online Resources:

- NPTEL YouTube Channel: Software Engineering Lectures by Prof Rajib Mall, IIT Kharagpur https://youtube.com/playlist?list=PLbRMhDVUMngf8oZR3DpKMvYhZKga90JVt&si=tTBIT ZUdivHpNz1H
- NPTEL YouTube Channel: Software Engineering Lecture Series
   https://youtube.com/playlist?list=PL8751DA481F0F0D17&si=071fYV7GP8\_oc1xZ

https://youtube.co	om/playlist?list=PL87	51DA481F0F0J	D17&si=071fYV7GP8	<u>oclxZ</u>	
PART -D: Assess	sment and Ev	aluation		and the second s	
Suggested Continuous	<b>Evaluation Methods</b>	•	2		7
Maximum Marks:		0 Marks			
Continuous Internal As End Semester Exam (E		0 Marks 0 Marks			
Continuous Internal	The second secon		Better marks out of	the two Test / Ouiz	
Assessment (CIA): (By Course Teacher)	Assignment / Semin Total Marks -		+ obtained marks in considered aga	Assignment shall be	
End Semester	Two section - A &	B			
			Mark; Q2. Short answer tylout of 2 from each unit		
lame and Signature of C			<b>΄</b> Λ	Om al	0
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Ourcomes (CLO)  Create various Tables and Databases. Explore various SQL commands. Create Database on the basis of E-R diagrams for Minor and Major Project Total Marks  Max. Marks: 100  Min Passing Marks: 40  PART -B: Content of the Course  Total No. of Teaching-Learning Periods (01 Hr. per period) - 45 Periods (45 Hours)  Init  Topics (Course contents)  Overview of Database Management: Introduction, Data Processing versus Data Management, Data Models: Network Model, Relational Model, Hierarchical Model, Instance and schema, View of Database system, File Oriented Approach vs Database Oriented Approach, Data Independence, DBMS Architecture, Database Administration Roles, Database languages: DDL, DML, DCL, TCL, Different kinds of DBMS users, Introduction to Data Dictionary.  Database Design and E-R Model: Introduction, Entity, Strong and weak entities, Relationship, Cardinality, Attributes, Concept of keys: Super key, Candidate key, Primary key, Alternate key, Foreign key, ER Diagram, Constraints in Database, Codd's Rules, Extended ER features: Generalization, Specialization and Aggregation, Participation, Converting an E-R model into relational Schema.  Participation, Converting an E-R model into relational Schema.  Relational Database Design and Operations: Introduction, Dependencies: Functional dependencies, Multivalued Dependencies, Join dependencies, Database anomalies, Decomposition, Normalization: Normal forms INF, 2NF, 3NF, BCNF, 4NF, 5NF, Denormalization. Relational Algebra: Select operation, Project operation, Union operation, Cartesian Product operation, Intersection operation, Join operation, Different types of joins (Inner join, Outer join, Self join).  Transaction: Introduction, Desirable properties of transaction (ACID), Concurrency of transaction in the product of transaction	A service of the service of		COURSE	CURRICULUM				
Course Code   CASC-08T   Course Code   CASC-08T	PAR	T-A: Introd	uction					
Course Code   CASC-08T   Session: 2/21-20-3	Progr	ram: Bachelor in Co	mputer Application	C	C ' Man ( MA	_		
Course Code CASC-08T  Relational Database Management System  DSC (Discipline Specific Course)  At the end of this course, the students will be able to:  • Learn about Database Concepts, Architecture, various Users, Data Models and Data Management.  • Familiar with RDBMS Software like Oracle and MySql.  • Create various Tables and Databases.  • Explore various SQL commands.  • Create Database on the basis of E-R diagrams for Minor and Major Project of Create National Systems.  • Create Database on the basis of E-R diagrams for Minor and Major Project of Total Marks  Max. Marks: 100  Min Passing Marks: 40  PART -B: Content of the Course  Total No. of Teaching-Learning Periods (01 Hr. per period) - 45 Periods (45 Hours)  Topics (Course contents)  No. of Period Management, Data Models: Network Model, Relational Model, Hierarchical Model, Instance and schema, View of Database system, File Oriented Approach vs Database Oriented Approach, Data Independence, DBMS Architecture, Database Administration Roles, Database languages: DDL, DML, DCL, TCL, Different kinds of DBMS users, Introduction to Data Dictionary.  Database Design and E-R Model: Introduction, Entity, Strong and weak entities, Relationship, Cardinality, Attributes, Concept of keys: Super key, Candidate key, Primary key, Alternate key, Foreign key, ER Diagram, Constraints in Database, Code's Rules, Extended ER features: Generalization, Specialization and Aggregation, Participation, Converting an E-R model into relational Schema.  111  Relational Database Design and Operations: Introduction, Dependencies: Functional dependencies, Multivalued Dependencies, Join dependencies, Database anomalies, Decomposition, Normalization: Normal forms 1NF, 2NF, 3NF, BCNF, 4NF, 5NF, Decomposition, Normalization: Normal forms 1NF, 2NF, 3NF, BCNF, 4NF, 5NF, Decomposition, Normalization: Normal intersection operation, Different types of joins (Inner join, Outer join, Self join).  1V Transaction: Introduction, Desirable properties of transaction (ACID), Concurrency of the product				Semester - III	Session: 2021-202	.) <i>)</i>		
Course Type  DSC (Discipline Specific Course)  At the end of this course, the students will be able to:  Learn about Database Concepts, Architecture, various Users, Data Models and Data Management.  Familiar with RDBMS Software like Oracle and MySql.  Create various Tables and Databases.  Explore various SQL commands.  Create Database on the basis of E-R diagrams for Minor and Major Project.  Total Marks  Max. Marks: 100  Min Passing Marks: 40  PART -B: Content of the Course  Total No. of Teaching-Learning Periods (01 Hr. per period) - 45 Periods (45 Hours)  Topics (Course contents)  Overview of Database Management: Introduction, Data Processing versus Data Management, Data Models: Network Model, Relational Model, Hierarchical Model, Instance and schema, View of Database system, File Oriented Approach vs Database Oriented Approach, Data Independence, DBMS Architecture, Database Administration Roles, Database languages: DDL, DML, DCL, TCL, Different kinds of DBMS users, Introduction to Data Dictionary.  II Database Design and E-R Model: Introduction, Entity, Strong and weak entities, Relationship, Cardinality, Attributes, Concept of keys: Super key, Candidate key, Relationship, Cardinality, Attributes, Concept of keys: Super key, Candidate key, Relationship, Cardinality, Attributes, Concept of keys: Super key, Candidate key, Relationship, Cardinality, Attributes, Concept of keys: Super key, Candidate key, Relationship, Cardinality, Attributes, Concept of keys: Super key, Candidate key, Relationship, Cardinality, Attributes, Concept of keys: Super key, Candidate key, Relational Database Design and Operations: Introduction, Dependencies: Functional dependencies, Multivalued Dependencies, Join dependencies, Database anomalies, Decomposition, Normalization: Normal forms 1NF, 2NF, 3NF, BCNF, 4NF, 5NF, Denormalization: Normal forms 1NF, 2NF, 3NF, BCNF, 4NF, 5NF, Denormalization: Introduction operation, Different types of joins (Inner join, Outer join, Self join).  IV Transaction: Introduction, Desirable properties of		The second secon	The state of the s					
At the end of this course, the students will be able to:    Course Learning Outcomes (CLO)	2 C	Course Title						
At the end of this course, the students will be able to:  • Learn about Database Concepts, Architecture, various Users, Data Models and Data Management.  • Familiar with RDBMS Software like Oracle and MySql.  • Create various Tables and Databases.  • Explore various Tables and Databases.  • Total Marks  Total Marks  Max. Marks: 100  Min Passing Marks: 40  PART -B: Content of the Course  Total No. of Teaching-Learning Periods (01 Hr. per period) - 45 Periods (45 Hours)  Topics (Course contents)  Init  Topics (Course contents)  No. of Period Management. Data Models: Network Model, Relational Model, Hierarchical Model, Instance and schema, View of Database system, File Oriented Approach various Data Independence, DBMS Architecture, Database Administration Roles, Database languages: DDL, DML, DCL, TCL, Different kinds of DBMS users, Introduction to Data Dictionary.  II Database Design and E-R Model: Introduction, Entity, Strong and weak entities, Relationship, Cardinality, Attributes, Concept of keys: Super key, Candidate key, Primary key, Alternate key, Foreign key, ER Diagram, Constraints in Database, Codd's Rules, Extended ER features: Generalization, Specialization and Aggregation, Participation, Converting an E-R model into relational Schema.  III Relational Database Design and Operations: Introduction, Dependencies: Functional dependencies, Multivalued Dependencies, Join dependencies, Database anomalies, Decomposition, Normalization: Normal forms INF, 2NF, 3NF, BNF, 4NF, 5NF, Depondencies, Multivalued Dependencies, Join dependencies, Database anomalies, Decomposition, Normalization: Normal forms INF, 2NF, 3NF, BNF, 4NF, 5NF, Depondencies, Multivalued Dependencies, Join dependencies, Database anomalies, Decomposition, Normalization: Normal forms INF, 2NF, 3NF, BNF, 4NF, 5NF, Depondence, Marchitecture, Databas	3 C							
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Total Marks Max. Marks: 100 Min Passing Marks: 40  PART -B: Content of the Course  Total No. of Teaching-Learning Periods (01 Hr. per period) - 45 Periods (45 Hours)  Topics (Course contents)  No. of Period  Topics (Course contents)  No. of Period  Topics (Course contents)  Overview of Database Management: Introduction, Data Processing versus Data Management, Data Models: Network Model, Relational Model, Hierarchical Model, Instance and schema, View of Database system, File Oriented Approach vs Database Oriented Approach, Data Independence, DBMS Architecture, Database Administration Roles, Database languages: DDL, DML, DCL, TCL, Different kinds of DBMS users, Introduction to Data Dictionary.  Database Design and E-R Model: Introduction, Entity, Strong and weak entities, Relationship, Cardinality, Attributes, Concept of keys: Super key, Candidate key, Primary key, Alternate key, Foreign key, ER Diagram, Constraints in Database, Codd's Rules, Extended ER features: Generalization, Specialization and Aggregation, Participation, Converting an E-R model into relational Schema.  III Relational Database Design and Operations: Introduction, Dependencies: Functional dependencies, Multivalued Dependencies, Join dependencies, Database anomalies, Decomposition, Normalization: Normal forms 1NF, 2NF, 3NF, BCNF, 4NF, 5NF, Denormalization. Relational Algebra: Select operation, Project operation, Union operation, Cartesian Product operation, Intersection operation, Different types of joins (Inner join, Outer join, Self join).  Total Market Bourse Course Course Course Periods (45 Hours)  Normalization: Relational Algebra: Select operation, Join operation, Different types of joins (Inner join, Outer join, Self join).  Total Market Bourse Course Course Periods (45 Hours)  Transaction: Introduction, Desirable properties of transaction (ACID), Concurrency Control techniques, Serializability.  Data Models, Data Dictionary, E-R Model, E-R Diagram, Keys, Functional Dependency Jounnalization, Relational Algebra. Concurrency, Serializabil		Course Learning. Outcomes (CLO)  At the end of this course, the students will be able to:  Learn about Database Concepts, Architecture, various Users, Data Models and Data Management.  Familiar with RDBMS Software like Oracle and MySql.  Create various Tables and Databases.  Familiar with RDBMS Software like Oracle and MySql.						
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Unit  Topics (Course contents)  No. of Period  No. of Period  No. of Period  Topics (Course contents)  No. of Period  No. of Period  Topics (Course contents)  No. of Period  No. of Period  Topics (Course contents)  No. of Period  Nodels: Introduction, Data Dictionary E-R Model, E-R Diagram, Constraints in Database Administration  Normalization Normalization Nelational Algebra Concurrency Serializability.  Normalization, Relational Algebra Concurrency Serializability.					in Passing Marks: 4	10		
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W Mambage at I Kan	Keywords	control techniques  Data Models, Dut  Anomalies Normal	, Serializability. La Dictionary, E-R Mo lization, Relational Algel	del, E-R Diagram, I bra. Concurrency, Ser	Keys, Functional Depe	Lendency		

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Text Books, Reference Books and Others

### Text Books Recommended:

- Database system concept, H. Korth and A. Silberschatz, TMH Publications.
- Data Base Management System, Alexies & Mathews, Vikash publication.
- Data Base Management System, C. J. Date , Narosha Publication.
- Data Base Management System By James Matin.

### Reference Books Recommended:

- Principles of Database System By Ullman.
- Program Design, Peter Juliff, PHI Publications.
- The Complete Reference, Kevin Loney, Oracle Press.
- SQL, PL/SQL The Programming Language of Oracle, Ivan Bayross, PustakKosh Publication.
- Microsoft SQL Server Management and Administration, Ross, STM Publications.

#### Online Resources:

- SWAYAM URL link for DBMS and RDBMS: https://youtu.be/f6LGtJutWyA
- SWAYAM URL link for DBMS and RDBMS: https://youtu.be/loL9Ve2SRwQ
- SWAYAM URL link for DBMS and RDBMS: https://swayam.gov.in/courses/4434-data-base-management-system.
- Introduction of DBMS from SWAYAM: https://onlinecourses.swayam2.ac.in/cec19\_cs05/preview
- Introduction of RDBMS from SWAYAM: https://onlinecourses.nptel.ac.in/noc19\_es46/preview
- Introduction to DMBS: https://www.w3schools.in/dbms/intro
- Data independence: https://www.w3schools.in/dbms/data-independence
- Generalization and Aggregation: https://www.w3schools.in/dbms/generalization-aggregation
- Introduction to DMBS: https://www.javatpoint.com/dbms-tutorial

PART -D: Asses	sment and Evaluation	
Suggested Continuous	Evaluation Methods:	
Maximum Marks:		
Continuous Internal A End Semester Exam (1		
Continuous Internal Assessment (CIA): (By Course Teacher)	122 (2) 30 130	Better marks out of the two Test / Quiz obtained marks in Assignment shall be considered against 30 Marks
End Semester Exam (ESE):	Two section – A & B  Section A: Q1. Objective – 10 x1= 10 M  Section B: Descriptive answer type gts1	ark; Q2. Short answer type- 5x4 =20 Marks out of 2 from each unit-4x10=40 Marks
Name and Signature of Dr. 175 Hora	Convener & Members of CBoS:	July (Mal Jain)
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			omputer Application	Semester - III	Session: 2024-202	6		
C	-	rte / Diploma / D		Landard Company of the Company of th	processing the second of the s			
1		rse Code	CASC-08P	has Management Sys	tem (Oracle/MySQL	)		
2	Course Title Lab 5: Relational Database Management System (Oracle/MySQL)  Course Type Practical							
3	Cou	rse Type		region di medicale distributiva di meditanti di mandi mendi mendi mendi mendi mendi mendi mendi mendi mendi me	and a constraint militarian executarian of the constraint and a second of the constraint of the constr			
4	Pre	requisite	As per program  At the end of this course, the	tulante will be able to	and the second s			
5		irse Learning comes (CLO)	<ul> <li>Learn about Datab and Data Managen</li> <li>Develop various T Software.</li> <li>Practice various relationships amor Software Develop</li> <li>Familiar with RDB as Backend for Software Develop new Data which enhances</li> </ul>	nent which helps them to it fables and Databases which helps them to it fables and Databases which helps them to it fables and Databases and Databases for their Minor are their Data Storage, It fables to face their Data Storage, It fables to face their Data Storage, It fables to fable the fables to fable their Data Storage, It fables the fables to fable the fables to fable the fables to fable the fables the fable	nteract with various Date child helps them to general atabases which are used and SQL Server which and Major Project Developta Accessibility and	te new eful for are used lopment d Data		
6	Cro	dit Value	1 Credits Credit =	=30 Hours Laboratory	or Field Learning/Tro	aining		
7		al Marks	Max. Marks: 50	) Min P	assing Marks: 20			
	RT -		nt of the Course					
		Total No.	of learning-Training/pe	rformance Periods: 3	0 Periods (30 Hours)	No. of		
Ma	dule		Topics	(Course contents)		Period		
Pra Expe	st of etical riment s	eid(primary fields and a questions a) Insert b) Displace) Delet d) Updare) Add of a) Insert b) Displace) Use for d) Updare e) Add of 3. Create a new 4. Create a vie	employee table in Oracle y key) ename, edesignations answer the following:  five records in above creaty all five records.  The the third record of the fone new field in the table. Harry table Oracle/SQL see table) having following days, deptid, gross, five records in the above y all five records.  The reign key relations and dethe second record of field in the table. It was a five records and the second record of field in the table. It was a five record of field in the table of the second record of field in the table. It was a five records and the second record of field in Oracle/SQL Server, we table in Oracle/SQL Server, we table in Oracle/SQL Server.	sated table.  Server with one primary fields: incentive, deduction an created table.  isplay records. eld deptid as 'Sales'.	ry key and foreign d net salary.	30		

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- Create a new database in Oracle/SQL Server having at least five tables for the Hotel Management System.
- 8. Create a new database in Oracle/SQL Server having at least four tables for Covid Vaccination Management System.
- 9. Create a new database in Oracle/SQL Server having at least five tables for the Library Management System.
- 10. Create a new table in Oracle/SQL Server and practice for Group by and Order by Clause.
- 11. Create a new table in Oracle/SQL Server and practice for max(), min(), avg() and count() functions.
- 12. Create a new table in Oracle/SQL Server and practice for lower(), substr().trim() and upper() functions.
- 13. Create a new table in Oracle/SQL Server and practice for unique and check constraints.
- 14. Create a new table in Oracle/SQL Server and practice for any two date formats.
- 15. Create a new table in Oracle/SQL Server and practice using clauses.
- 16. Create a new table in Oracle/SQL Server and practice for having clauses with sub queries.
- 17. Create a new table in Oracle/SQL Server and practice for aliases in any table.
- 18. Create a new table in Oracle/SQL Server and practice for inner and outer join.
- 19. Create a new table in Oracle/SQL Server and practice for Drop command.
- 20. Write a PL/SQL program for addition of two numbers.
- 21. Write a PL/SQL program to find the factorial value of any entered number.
- 22. Write a PL/SQL program for swapping of two numbers.
- 23. Write a PL/SQL program to print the first ten Natural Numbers.
- 24. Write a PL/SQL program to generate even series upto five digits starting from 2 and sum all the terms.
- 25. Write a PL/SQL program to practice for implicit and explicit cursors.

Note: Concerned teacher can add additional experiment as per requirement.

Name investignature of Convener & Members of CBOS:

Dr. H. S. Hota Kun Dr. K. B. Dubu)

Chairman (Dr. K. B. Dubu)

Sunli Levus Schu) (Surest Haku)

Sunli Levus Schu) (Surest Haku)

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### PART-C: Learning Resources

Text Books, Reference Books and Others

### Text Books Recommended:

- Database system concept, H. Korth and A. Silberschatz, TMH Publications.
- Data Base Management System, Alexies & Mathews, Vikash publication.
- Data Base Management System, C. J. Date , Narosha Publication.
- Data Base Management System By James Matin.

#### Reference Books Recommended:

- Principles of Database System by Ullman.
- Program Design, Peter Juliff, PHI Publications.
- The Complete Reference, Kevin Loney, Oracle Press.
- SQL, PL/SQL The Programming Language of Oracle, Ivan Bayross, PustakKosh Publication.

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Microsoft SQL Server Management and Administration, Ross, STM Publications.

### Online Resources:

- SWAYAM URL link for DBMS and RDBMS: https://youtu.be/f6LGtJutWyA
- SWAYAM URL link for DBMS and RDBMS: https://youtu.be/loL9Ve2SRwQ
- SWAYAM URL link for DBMS and RDBMS: https://swayam.gov.in/courses/4434-data-basc-management-system

### PART -D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:

Maximum Marks:

50 Marks

Continuous Internal Assessment (CIA):

15 Marks

15

End Semester Exam (ESE):

35 Marks

Continuous Internal

Internal Test / Quiz-(2):

Better marks out of the two Test / Quiz

Assessment (ClA): (By Course Teacher)

Assignment/Seminar +Attendance - 05 Total Marks -

+ obtained marks in Assignment shall be considered against 15 Marks

**End Semester** 

Laboratory / Field Skill Performance: On spot Assessment

- 20 Marks

Managed by

Exam (ESE):

A. Performed the Task based on lab. work

B. Spotting based on tools & technology (written) - 10 Marks

Course teacher as per lab. status

C. Viva-voce (based on principle technology) Name and Signature of Convener & Members of CBAS:

(Chairman) (Dr. K. B. Duhey)

C C/ 1	gram: Bachelor in tificate / Diploma / De		Semester - III	Session: <b>2025-2</b>	026
	Course Code	CASC-09T	· · · · · · · · · · · · · · · · · · ·	The state of the s	
	Course Title	Programming in Ja	va	and the state of t	
3	Course Type	DSC (Discipline Sp	Part for Conference and annual for the conference and annual for the conference and the c	The second section of the se	
	Prerequisite (if, any)		tinamia jakonje na njero je na una slovati dinasti dinasti i ni projekti na merojani na na ne	the school for the first makes those term of a small control to the standard design to the	
	Course Learning. Outcomes (CLO)	Understand fu     Understand fu     Understand th     Create user d     develop new     and AWT Pac     Familiar about	t Applet, Thread and Servlet	ning environment ava programming. I Packages which help th lity Software. I Games with the help of a Life Cycle which helps the	Applet
6	Credit Value		rtant applications for Internet Credit = 15 Hours - Lear		
	Total Marks	Max. Marks:	Mark Mark Control and Control	in Passing Marks: 4	0
		ent of the Cou	the same and the s	The second secon	
				AS Darioda (AS Uo.	11 20)
-	Total No. of Te	acting-Learning Pe	eriods (01 Hr. per period	) - 43 remous (43 mo	No. of
Unit		Topic	es (Course contents)		Period
I	development kit (J platform independe conditional and lo methods, nested an	DK), source files, jar ncy, data types, literals oping statements, var d inner class, string ha	, history of java, java virtua files, compiling and runni s, variables, constants, array ious packages, introduction ndling, constructor and its to class, types of inheritance.	ng of files, byte code, and its types, operators, of class, objects and ypes.	12
	overloading, methor final with inheritar nested interface, i creating a new pac	od overriding; abstract ace. Interface: definin mportance of interfac kage, concept of class-	class, constructor in multi g and implementing interfa e in java. Package: defin path, access protection, imp	level inheritance, using ce, extending interface, ing package, rules for orting package.	11
Ш	try statements, the checked/unchecked	row, throws and fi	g: using try and catch, multi nally, types of exception wn exception class	•	
	synchronization, in	el: main thread, creating ter thread communication	ng own thread, life cycle of tion, suspending, resuming a	and stopping thread.	
IV	synchronization, in  Java Packages: I/console input, writ image and sound Framework, Event delegation-event m	el: main thread, creating ter thread communicator thread communicator of classes: Byte Streaming console output. A in applet. Lang: Va. Model, Scanner Classodel, Event classes.	ing own thread, life cycle of tion, suspending, resuming an and Character Stream, Prepplet: Applet Life Cycle, carious classes, Importance as AWT: Exploring AWT. Source of event, Event lister	and stopping thread. Idefined Stream, reading reating an applet, Using class Definition, Util: Event handling – The	11
	synchronization, in  Java Packages: I/console input, writ image and sound Framework, Event delegation-event m rnouse and keyboa	el: main thread, creating ter thread communicator thread communicator of classes: Byte Streaming console output. A in applet. Lang: Va. Model, Scanner Clamodel, Event classes. Stream odent. Adapter classer.	ing own thread, life cycle of tion, suspending, resuming an and Character Stream, Prepplet: Applet Life Cycle, carious classes, Importance as AWT: Exploring AWT. Source of event, Event listers.	and stopping thread. defined Stream, reading reating an applet, Using class Definition, Util: , Event handling – The mer interfaces, handling	11
eywor	synchronization, in  Java Packages: I/console input, writ image and sound Framework, Event delegation-event m rnouse and keyboa	el: main thread, creating ter thread communicator thread communicator of classes: Byte Streaming console output. A in applet. Lang: Va. Model, Scanner Classodel, Event classes, Strd event. Adapter classes (JVM), Java Develop	ng own thread, life cycle of tion, suspending, resuming; in and Character Stream, Prepplet: Applet Life Cycle, carious classes, Importance as AWT: Exploring AWT. Source of event, Event listes.	and stopping thread. defined Stream, reading reating an applet, Using class Definition, Util: , Event handling – The mer interfaces, handling	11

Text Books, Reference Books and Others

#### Text Books Recommended:

- Naughton P and Schildt H., Osborne, The complete reference, McGraw-Hill, Berkeley Publication.
- James R. Laverick, An Introduction to JAVA programming, Firewall Media publication.

### Reference Books Recommended:

- E. Balgurusamy, Java Programming, McGraw-Hill Publication.
- Rashmi Kanta Das, Core JAVA for beginners. Vikas Publication.

### Online Resources:

- · SWAYAM URL Link for Java
  - o https://onlinecourses.swayam2.ac.in/aic20\_sp13/preview
  - o https://onlinecourses.nptel.ac.in/noc19\_cs84/preview
  - https://www.dqindia.com/iit-bombay-offers-free-online-course-java-swayam-platform/
  - o https://www.classcentral.com/course/swayam-programming-in-java-12930
- W3schools Java Tutorial.

Java Tutorial (w3schools.com)

- Online Platforms to Exercise and Execute the Java Programs
  - o Online Java Compiler (programiz.com)
  - o Solve Java | HackerRank
  - o Online Java Compiler Online Java Editor Java Code Online (jdoodle.com)
- NPTEL Channel: Programming in Java
   Programming In Java Course (nptel.ac.in)

PART -D: Asses	sment and Evaluation
Suggested Continuous	
Maximum Marks:	100 Marks
Continuous Internal A End Semester Exam (	ESE): 70 Marks
Continuous Internal Assessment (CIA): (By Course Teacher)	Detter marks out of the fair lest / [ ]1117
End Semester Exam (ESE):	Two section – A & B  Section A: Q1. Objective – 10 x1= 10 Mark; Q2. Short answer type- 5x4 = 20 Marks  Section B: Descriptive answer type qts., 1 out of 2 from each unit-4x10=40 Marks
Name and Signature of Dr H.S. Hora King Chairman (Or K.	min (Dr. S. Jain) & Khurth
Suchie kower &	
B	ANTERIA K

F	PART- A: Introd	uction		
	rogram: Bachelor in Certificate / Diploma / Do	Computer Application gree)	Semester - III	Session: 2025-2026
1	Course Code	CASC-9P		
2	Course Title	Lab 6: Programming in	Java	TO THE REAL PROPERTY AND THE PROPERTY OF THE P
3	Course Type	Practical	en et soon ook een een elektroop en een en	ika mina primanak ng mar utim kanal magamakka katan palam magnasak, makanakan mana
4	Prerequisite (if, any)	As per program		
5	Course Learning Outcomes (CLO)	Develop new Packag and Utility Software     Develop new Online and AWT Packages.     Familiar about Appl develop value added	n in java ept of multi-threading ges which help them to de e Software and Internet o et, Thread and Servlet Li services for Internet Use	evelop new application software Games with the help of Applet ife Cycle which helps them to ers.
6	Credit Value	1 Credits Credit =30 H	lours Laboratory or F	ield Learning/Training
7	Total Marks	Max. Marks: 50	Min Passing N	1arks: 20

### **PART-B:** Content of the Course

Module		Total No. of learning-Training/performance Periods: 30 Periods (30 Hours)  Topics (Course contents)	No. of Period
Lab./Field	1.	Write a program to check palindrome number.	-
Training/	2.	Write a program to check Armstrong number.	
Experiment	3.	Write a program to check the prime number.	
Contents	4.	Write a program to calculate simple interest using the GUI Form.	
of Course	5.	Write a program to demonstrate the thread life cycle.	-
	6.	Write a program to show the use of applet.	
	7.	Write a program to demonstrate the concept of arrays.	
	8.	Write a program to find the second largest and second smallest number in array.	
	9.	Write a program to perform multiplication of two matrices.	
	10	Write a program to demonstrate the concept of method overloading.	
	11.	Write a program to demonstrate the concept of constructor overloading.	
	12.	Write a program to demonstrate the concept of inner classes.	111111111111111111111111111111111111111
,	13.	Write a program to demonstrate the concept of inheritance.	30
	14.	Write a program to demonstrate the concept of access specifiers in java.	30
	15.	Write a program to implement the concept of interface.	
	16	Write a program to show the creation of package in java.	
	17.	Write a program to design the user registration form with basic registration	
		details.	
	18.	Write a program to show the exception handling process in java.	
1	19	Write a program to show the significance of multithreading.	
	20	Write a program to read the data from the console device and store it in any file	Ì
		in secondary storage.	1
	21	Write a program to copy the content of any file into another file.	
	22	Write a program to demonstrate the advantages of event delegation model.	
	23.	Write a program in java for command line value passing.	
		te: Concerned teacher can add additional practical exercises as per requirement.	The state of the s

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Action to the contract of the	interface, Inheritance, package, exception ha	ndling throads and the
Or. H.S. Hoty King Chairman Drk. Bulil Suchil kumar Bahn	Bubey Dr SKSALA) Amy	MS, Jain) R. Khuutkey  ANJEETA KU  ANJEETA KU
	ing Resources	
Text Books, Reference	e Books and Others	
dolication.	Schildt H., Osborne, The complete	
Reference Pools D	, An Introduction to JAVA programming,	, Firewall Media publication.
Reference Books Recomm		
	ava Programming, McGraw-Hill Publicat s ,Core JAVA for beginners, Vikas Publica	
Online Resources:	B	
SWAYAM URL L	ink for Java	
		io.,
o https://onlin	necourses.swayam2.ac.in/aic20_sp13/previnecourses.nptel.ac.in/noc19_cs84/preview	VICW
	w.dqindia.com/iit-bombay-offers-free-onl	
	w.classcentral.com/course/swayam-progra	
W3schools Java T		simming-m-java-12990
Java Tutorial (w3scl		
	Exercise and Execute the Java Programs	
	a Compiler (programiz.com)	
	HackerRank	
<ul> <li>Online Java</li> </ul>	a Compiler - Online Java Editor - Java Code O	Online (jdoodle.com)
<ul> <li>NPTEL Channel: Pr</li> </ul>		
Programming In Jav	va - Course (nptel.ac.in)	
PART -D: Assess	sment and Evaluation	
Suggested Continuous	Evaluation Methods:	
Maximum Marks:	50 Marks	
Maximum Marks: Continuous Internal As	50 Marks ssessment (CIA): 15 Marks	
Maximum Marks: Continuous Internal As End Semester Exam (E	50 Marks ssessment (CIA): 15 Marks CSE): 35 Marks	
Maximum Marks: Continuous Internal As End Semester Exam (E Continuous Internal	50 Marks ssessment (CIA): 15 Marks CSE): 35 Marks Internal Test / Quiz-(2): 10 & 10	Better marks out of the two
Maximum Marks: Continuous Internal As End Semester Exam (E	50 Marks ssessment (CIA): 15 Marks CSE): 35 Marks Internal Test / Quiz-(2): 10 & 10 Assignment/Seminar + Attendance - 05	Test / Quiz + obtained marks in
Maximum Marks: Continuous Internal As End Semester Exam (E Continuous Internal Assessment (CIA): (By Course Teacher)	50 Marks ssessment (CIA): 15 Marks CSE): 35 Marks Internal Test / Quiz-(2): 10 & 10 Assignment/Seminar +Attendance - 05 Total Marks - 15	Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks
Maximum Marks: Continuous Internal As End Semester Exam (E Continuous Internal Assessment (CIA): (By Course Teacher)  End Semester	50 Marks ssessment (CIA): 15 Marks CSE): 35 Marks Internal Test / Quiz-(2): 10 & 10 Assignment/Seminar + Attendance - 05 Total Marks - 15 Laboratory / Field Skill Performance	Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks  Managed by
Maximum Marks: Continuous Internal As End Semester Exam (E Continuous Internal Assessment (CIA): (By Course Teacher)	50 Marks ssessment (CIA): 15 Marks CSE): 35 Marks Internal Test / Quiz-(2): 10 & 10 Assignment/Seminar + Attendance - 05 Total Marks - 15  Laboratory / Field Skill Performanc On spot Assessment	Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks  Managed by Course
Maximum Marks: Continuous Internal As End Semester Exam (E Continuous Internal Assessment (CIA): (By Course Teacher)  End Semester	50 Marks ssessment (CIA): 15 Marks CSE): 35 Marks Internal Test / Quiz-(2): 10 & 10 Assignment/Seminar + Attendance - 05 Total Marks - 15  Laboratory / Field Skill Performanc On spot Assessment A. Performed the Task based on lab. w	Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks  Te: Managed by Course vork - 20 Marks teacher as
Maximum Marks: Continuous Internal As End Semester Exam (E Continuous Internal Assessment (CIA): (By Course Teacher)  End Semester	50 Marks ssessment (CIA): 15 Marks CSE): 35 Marks Internal Test / Quiz-(2): 10 & 10 Assignment/Seminar + Attendance - 05 Total Marks - 15  Laboratory / Field Skill Performanc On spot Assessment	Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks  Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks  Managed by Course teacher as gy (written) - 10 Marks  per lab.
Maximum Marks: Continuous Internal As End Semester Exam (E Continuous Internal Assessment (CIA): (By Course Teacher)  End Semester	50 Marks ssessment (CIA): 15 Marks CSE): 35 Marks Internal Test / Quiz-(2): 10 & 10 Assignment/Seminar + Attendance - 05 Total Marks - 15  Laboratory / Field Skill Performanc On spot Assessment A. Performed the Task based on lab. w B. Spotting based on tools & technolog Viva-voce (based on principle/technolog	Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks  Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks  Managed by Course teacher as gy (written) - 10 Marks  per lab.
Maximum Marks: Continuous Internal As End Semester Exam (E Continuous Internal Assessment (CIA): (By Course Teacher)  End Semester Exam (ESE):	50 Marks ssessment (CIA): 15 Marks CSE): 35 Marks Internal Test / Quiz-(2): 10 & 10 Assignment/Seminar + Attendance - 05 Total Marks - 15  Laboratory / Field Skill Performanc On spot Assessment A. Performed the Task based on lab. w B. Spotting based on tools & technolog Viva-voce (based on principle/technolog	Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks  Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks  Managed by Course teacher as gy (written) - 10 Marks  per lab.
Maximum Marks: Continuous Internal As End Semester Exam (E Continuous Internal Assessment (CIA): (By Course Teacher)  End Semester Exam (ESE):  Name and Signature of C	50 Marks ssessment (CIA): 15 Marks CSE): 35 Marks Internal Test / Quiz-(2): 10 & 10 Assignment/Seminar + Attendance - 05 Total Marks - 15  Laboratory / Field Skill Performanc On spot Assessment A. Performed the Task based on lab. w B. Spotting based on totals & technolog Viva-voce (based on principle/technolo Convener & Members:	Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks  Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks  Managed by Course teacher as per lab. ggy) - 05 Marks status  The property of the property o
Maximum Marks: Continuous Internal As End Semester Exam (E Continuous Internal Assessment (CIA): (By Course Teacher)  End Semester Exam (ESE):  Name and Signature of Continuous Internal Assessment (CIA): (By Course Teacher)	50 Marks ssessment (CIA): 15 Marks CSE): 35 Marks Internal Test / Quiz-(2): 10 & 10 Assignment/Seminar + Attendance - 05 Total Marks - 15  Laboratory / Field Skill Performanc On spot Assessment A. Performed the Task based on lab. w B. Spotting based on tools & technolog Viva-voce (based on principle/technolo Convener & Members:	Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks  Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks  Managed by Course teacher as gy (written) - 10 Marks  per lab.
Maximum Marks: Continuous Internal As End Semester Exam (E Continuous Internal Assessment (CIA): (By Course Teacher)  End Semester Exam (ESE):  Name and Signature of Continuous Internal Assessment (CIA): (By Course Teacher)	50 Marks ssessment (CIA): 15 Marks CSE): 35 Marks Internal Test / Quiz-(2): 10 & 10 Assignment/Seminar + Attendance - 05 Total Marks - 15  Laboratory / Field Skill Performanc On spot Assessment A. Performed the Task based on lab. w B. Spotting based on tools & technolog Viva-voce (based on principle/technolo Convener & Members:	Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks  Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks  Managed by Course teacher as per lab. status  DY (S Jain) R Khall
Maximum Marks: Continuous Internal As End Semester Exam (E Continuous Internal Assessment (CIA): (By Course Teacher)  End Semester Exam (ESE):  Name and Signature of Continuous Internal Assessment (CIA): (By Course Teacher)	50 Marks ssessment (CIA): 15 Marks CSE): 35 Marks Internal Test / Quiz-(2): 10 & 10 Assignment/Seminar + Attendance - 05 Total Marks - 15  Laboratory / Field Skill Performanc On spot Assessment A. Performed the Task based on lab. w B. Spotting based on tools & technolog Viva-voce (based on principle/technolo Convener & Members:	Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks  Managed by Course vork - 20 Marks gy (written) - 10 Marks gy) - 05 Marks Status  Or S Jain) R Friedly
Maximum Marks: Continuous Internal As End Semester Exam (E Continuous Internal Assessment (CIA): (By Course Teacher)  End Semester Exam (ESE):  Name and Signature of Continuous Internal Assessment (CIA): (By Course Teacher)	50 Marks ssessment (CIA): 15 Marks CSE): 35 Marks Internal Test / Quiz-(2): 10 & 10 Assignment/Seminar + Attendance - 05 Total Marks - 15  Laboratory / Field Skill Performanc On spot Assessment A. Performed the Task based on lab. w B. Spotting based on tools & technolog Viva-voce (based on principle/technolo Convener & Members:	Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks  Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks  Managed by Course teacher as per lab. status  DY (S Jain) R Khall
Maximum Marks: Continuous Internal As End Semester Exam (E Continuous Internal Assessment (CIA): (By Course Teacher)  End Semester Exam (ESE):  Name and Signature of Continuous Internal Assessment (CIA): (By Course Teacher)	50 Marks ssessment (CIA): 15 Marks CSE): 35 Marks Internal Test / Quiz-(2): 10 & 10 Assignment/Seminar + Attendance - 05 Total Marks - 15  Laboratory / Field Skill Performanc On spot Assessment A. Performed the Task based on lab. w B. Spotting based on tools & technolog Viva-voce (based on principle/technolo Convener & Members:	Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks  Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks  Managed by Course teacher as per lab. status  DY (S Jain) R Khall

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	cogr <mark>am:</mark> Bachelor in Co ertificate / Diploma / D	•	Semester –	- 111 Session: 2021-2025,
1	Course Code	CASE-01	1	
2	Course Title	Cyber Security and Cyber Law		
1	Course Type	DSE (Discipline Specific Elective)		
4	Prerequisite	As per Program		
12	Course Learning. Outcomes(CLO)	<ul> <li>Understand the attacks, the attacks, the Identify, difference of the Understand the Understand the crimes the Understand the Underst</li></ul>	nreats and vulnerabilities. erentiate and explain differ he concept of Cyber secuthe cyber crimes, their naturough available platforms the basic concepts related to	rent cyber reimes and frauds.  rity issues and challenges associated are, legal remedies and how to report and procedures.  to E-Commerce and digital payments.
Ċ	Credit Value	4 Credits Credit = 15 Hours -Learning & Observation		
7	Total Marks	Max. Marks:	100	Min Passing Marks: 40

### PART - B: Content of the Course

Total No. of Teaching-Learning Periods (01 Hr. per period) - 45 Periods (45 Hours)					
Unit	Topics (Course contents)	No .of Period			
I	Introduction: Defining Cyberspace, Architecture of cyberspace, Internet, World wide web, Internet society, Regulation of cyberspace, Concept of cyber security, Issues and challenges of cyber security, Cyber Physical System Security, Classification of cyber crimes, Common cyber crimes- cyber crime targeting computers and mobiles, cyber crime against women and children, financial frauds, social engineering attacks, malware and ransomware attacks, zero day and zero click attacks, Cybercriminals modus-operandi, Reporting of cyber crimes. Remedial and mitigation measures.	15			
[]	Authentication: Vulnerability and vulnerability assessment, Intrusion Detection and Intrusion Prevention System, Introduction of Authentication, User Authentication Methods, Biometric Authentication Methods.	15			
Ш	Different Securities: Window Security, Smartphone Security, Browser Security, Web Security, Email Security, Wi-Fi Security, and Social Media Security: Challenges, opportunities and pitfalls in online social network, Best practices for the use of Social media, Introduction to digital payments, Components of digital payment and stakeholders, Digital payments related common frauds and preventive measures. RBI guidelines on digital payments and customer protection in unauthorized banking transactions.				
IV	Cyber Law Basics: Information Technology Act 2000-Amendments; Laws regarding posting of inappropriate content, Relevant provisions of Payment Settlement Act 2007, Cybercrimes and offenses dealt with IPC, RBI Act, IPR in India.				
eywords	Coherspace Cybercrime, Cybek security, Physical System security, Ransomware, Modus	-operan			

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Text Books, Reference Books and Others

### Text Books Recommended:

- Cyber criminology: Exploring Internet Crimes and Criminal Behavior by K. Jaishankar, CRC press.
- Data communication and Networking by B. Forouzan, TMH.
- An unofficial guide to ethical hacking by Ankit Fadia, trinity publisher.
- An ethical guide to hacking mobile phones by Ankit Fadia, trinity publisher.
- Computer Network Security and Cyber Ethics by Siva Ram Murthy.B.S. Manoj . McFarland and Company, INC

### Reference Books Recommended:

- Cyber Crime Impact in the New Millennium, by R. C Mishra, Author Press. Edition 2010.
- Cyber Security Understanding Cyber Crimes, Computer Forensics and Legal Perspectives by Sumit Belapure and Nina Godbole, Wiley India Pvt. Ltd. (First Edition, 2011)
- Security in the Digital Age: Social Media Security Threats and Vulnerabilities by Henry A. Oliver, Create Space Independent Publishing Platform. (Pearson, 13th November, 2001)
- Electronic Commerce by Elias M. Awad, Prentice Hall of India Pvt Ltd.
- Cyber Laws: Intellectual Property & E-Commerce Security by Kumar K, Dominant Publishers.
- Network Security Bible, Eric Cole, Ronald Krutz, James W. Conley, 2nd Edition, Wiley India Pvt. Ltd.
- Fundamentals of Network Security by E. Maiwald, McGraw Hill.

#### Online Resources:

- Cyber Security from SWAYAM: https://onlinecourses.swayam2.ac.in/cec21\_cs09/preview
- Introduction to Cyber Security from SWAYAM: https://onlinecourses.swayam2.ac.in/nou20\_cs01/preview
- Cyber Security for Beginners:
  - https://heimdalsecurity.com/pdf/cyber\_security\_for\_beginners\_ebook.pdf

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- Cyber Criminology by K. Jaishankar: <a href="https://larosc.staff.ub.ac.id/files/2011/12/Cyber-Criminology-">https://larosc.staff.ub.ac.id/files/2011/12/Cyber-Criminology-</a> Exploring-Internet-Crimes-and-Criminal-Behavior.pdf
- Fundamental of Cyber Security by Dr. Jitendra Pandey: http://www.uou.ac.in/sites/default/files/slm/FCS.pdf
- Information Technology Act 2000: https://www.meity.gov.in/content/information-technology-act-2000
- Information Technology Act: https://www.mcity.gov.in/content/information-technology-act
- Cyber Crime Law and Practice: https://www.icsi.edu/media/webmodules/publications/Cyber Crime Law and Practice.pdf

Suggested Continuous Maximum Marks:	100 Marks				
Continuous Internal A End Semester Exam(E					
Continuous Internal Assessment(CIA): (By Course Teacher)	1 7 1 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Better marks out of the two Test Quiz + obtained marks in Assignment shall be considered against 30 Marks			
End Semester Exam (ESE):	Two section – A & B Section A: Qh Objective – 10 x1= 10 Mark; Q2. Short answer type- 5x4=20 Marks Section B: Descriptive answer type qts., 1 out of 2 from each unit-4x10=40 Marks				