

Department of Computer Science and
Applications

Board of Studies

B.Com (Computer Applications)



2022-23

Government College (A), Rajahmundry

Accredited with 'A+' grade by NAAC

**PROCEEDINGS OF THE PRINCIPAL
GOVERNMENT AUTONOMOUS COLLEGE, RAJAHMUNDRY**

PRESENT: Dr.R. David Kumar, M.Sc., M.Phil., Ph.D.

RC. NO. 152/GCRJY/ACAD. CELL//BOS/2021/, DATED. 05.07. 2022

Sub: GCRJY-Conduct of BoS Meetings for the Academic Year 2022-23 - Regarding

ORDER:

With reference to the subject cited, the lecturers-in-Charge of all the departments are hereby informed to conduct their respective Board of Studies (BoS) meetings by the end of July 2022.

You are also informed to intimate the date of your BoS meeting well in advance to the subject experts/University nominee/Industrial Nominee/members of BoS/Student nominee concerned to get their valuable views and suggestions in the deliberations to frame the concrete syllabi for your subjects keeping in view the objectives of the college and interest of the stake holders. The date should also be indicated to Academic Cell in advance.

You are further suggested to utilize the academic autonomy in incorporating the additional modules in the syllabi and identify the pedagogical strategies to implement the same.

Please note that your BoS document should contain the following contents in order

- a) Proceedings of the Principal pertaining to BoS
- b) Composition of BoS
- c) Table showing the Allocation of Credits in the following table for both theory and Lab in case of science subjects

S. No	Semester	Course Code	Title of the Course (Paper)	Max. Marks (SEE)	Marks in CIA	Hrs./week			
						L	T	P	C

L= Lecture, T= Tutorial, P= Practical, C= Credits

- d) Agenda wise Resolutions adopted in the meeting with detailed discussions
- e) Table showing Members present with signatures
- f) List of Examiners & Paper setters
- g) Syllabus for each course in the **Proforma given** (both theory & Practical in case of Science subjects) followed by model question papers (theory & practical)
- h) Unit wise Assignment questions at the end of syllabus of each course

You are requested to submit a separate document regarding addition/ deletion of specific topics from the syllabus in each course (paper) with justification, if any.

ACADEMIC CELL, GOVERNMENT COLLEGE
(AUTONOMOUS) RAJAHMUNDRY

All the *new Courses/certificate courses* proposed for the calendar year 2022, Seminars/workshops, field visits, study tours for 2022-23 should be placed before the respective Board and get them approved.

You are also requested to submit 2 hard copies & 2 soft copies (CDs) of BoS document to the Academic cell along with original bills and settle the bills after completion of the BoS meeting. You can approach the Academic Cell for necessary documents.

Most Important: You are requested to submit soft & hard copies of *Resolutions (including discussion)* separately to IQAC immediately after BoS meeting is completed.



PRINCIPAL ·
GOVERNMENT AUTONOMOUS COLLEGE
RAJAHMUNDRY

Copy to:

1. Lecturers-in-Charge of all the departments
2. File

GOVERNMENT COLLEGE (AUTONOMOUS), RAJAMAHENDRAVARAM

DEPARTMENT OF COMPUTER SCIENCE
B.Com. CA PROGRAMME – COURSE STRUCTURE

UNDER CBCS PATTERN

We have made significant changes to the following syllabus based on the feedback from learners and educators.

S. No	Semester	Course Code	Title of the course	Changes in the Syllabus
1	I	CAP168	Information Technology	1. MS Access, Create Basic Access Forms is shifted from Unit IV to UNIT V
2	II	CAP169	E-commerce and Web Designing	1. Security and Encryption is shifted from Additional Input to UNIT V
3	III	CAP170	Programming with C & C++	1. Classes and Objects is shifted from Unit IV to UNIT V
4	IV	CAP171	Data Base Management System	1. PL/SQL is shifted from Additional Input to UNIT V
5	IV	CAP172	Object Oriented Programming using JAVA	1. Applet Programming is shifted from Additional Input to UNIT V
6	V	The following courses are introduced in V Semester CAP173 6A: Big data Analytics using R CAP174 7A: Data Science using Python CAP175 6B: Mobile application development CAP176 7B: Cyber security and malware analysis CAP177 6C: E-commerce application development CAP178 7C: Real time governance system (RTGS) CAP179 6D: Multimedia Tools and Applications CAP180 7D: Digital imaging		

GOVERNMENT COLLEGE(AUTONOMOUS), RAJAHMUNDRY
(Accredited by NAAC "A+" Grade)
DEPARTMENT OF COMPUTERSCIENCE & APPLICATIONS &APPLICATIONS
COMPOSITION OF BOARD OF STUDIES FOR THEYEAR 2022-23

Chairman	Mr. Suneel Kumar Duvvuri In-charge of the Department, Department Of Computer Science & Applications Government College(A),Rajahmundry.
University Nominee	Dr. V .Persis Dept. of CSC,UC Engg. Adikavi Nannaya University, Rajahmundry.
Subject Expert	Smt E.Jyothi Kiranmayi SVD Govt. College for Women, Nidadavole
Subject Expert	Mr. RV Satyanarayana PRGDC, Kakinada
Expert from Industry	Sri Vasanth kumar Lead SAS Programmer, B&P Team, EMMES Services Pvt Ltd, Bangalore
Members	
Smt U.SandhyaRani	Faculty Member
Sri Devaraju Hanumanthu	Faculty Member
Sri P.Narsingarao	Faculty Member
Sri.D.SeethaRamulu	Faculty Member
Kum S.JayaLakshmi	Faculty Member
Sri K.Ramesh	Faculty Member
M.Tejaswi	Faculty Member
N.Priyanka	Faculty Member
CH.Sujatha	Faculty Member
V.Sailaja	Faculty Member
Balaparameswari	Faculty Member
K.Chanakya Manas	Student

B.Com (Computer Applications)


B.Com. Computer Applications

Academic Year 2022-2023

Course Structure of Computer Applications under CBCS Pattern

S.No	Semester	Course Code	Title of the Course	Marks		TOTAL	Hrs/Week			C	
				SEE	CIA		L	T	P		
1	SEM-I	CAP168	Information Technology	50	50	100	3	1	-	3	
2		CAP168P	Information Technology(LAB)	-	50	50	-	-	2	2	
3	SEM-II	CAP169	E-commerce and Web Designing	50	50	100	3	1	-	3	
4		CAP169P	E-commerce and Web Designing(LAB)	50	-	50	-	-	2	2	
5	SEM-III	CAP170	Programming with C&C++	50	50	100	3	1	-	3	
6		CAP170P	Programming with C&C++ (LAB)	-	50	50	-	-	2	2	
7	SEM-IV	CAP171	Data Base Management System	50	50	100	3	1	-	3	
8		CAP171P	Data Base Management System (LAB)	50	-	50	-	-	2	2	
9		CAP172	Object Oriented Programming using JAVA	50	50	100	3	1	-	3	
10		CAP172P	Object Oriented Programming using JAVA (LAB)	50	-	50	-	-	2	2	
11	SEM-V	CAP173	Elective-A 6A: Big data Analytics using R	50	50	100	3	1	-	3	
12		CAP173P		Big data Analytics using R(LAB)	-	50	50	-	-	2	2
13		CAP174		7A: Data Science using Python	50	50	100	3	1	-	3
14		CAP174P			Data Science using Python(LAB)	-	50	50	-	-	2
15	SEM-V	CAP175	Elective-B 6B: Mobile application development	50	50	100	3	1	-	3	
16		CAP175P		Mobile application development(LAB)	-	50	50	-	-	2	2
17		CAP176		7B: Cyber security and malwareanalysis	50	50	100	3	1	-	3

18		CAP176P		Cyber security and malware analysis (LAB)	-	50	50	-	-	2	2
19	SEM-V	CAP177	Elective-C	6C: E-commerce application development	50	50	100	3	1	-	3
20		CAP177P		E-commerce application development LAB	-	50	50	-	-	2	2
21		CAP178		7C: Real time governance system (RTGS)	50	50	100	3	1	-	3
22		CAP178P		Real time governance system (RTGS) (LAB)	-	50	50	-	-	2	2
23		CAP179		6D: Multimedia Tools and Applications	50	50	100	3	1	-	3
24	SEM-V	CAP179P	Elective-D	Multimedia Tools and Applications(LAB)	-	50	50	-	-	2	2
25		CAP180		7D: Digital imaging	50	50	100	3	1	-	3
26		CAP180P		Digital imaging(LAB)	-	50	50	-	-	2	2

	Government College (Autonomous) Rajahmundry	Program & Semester			
Course Code CAP168	TITLE OF THE COURSE Information Technology	I B.Com (CA) (I Sem)			
Teaching	Hours Allocated: 60 (Theory)	L	T	P	C
Pre-requisites:		3	1	-	3

Course Objectives:

To acquire basic knowledge in Information Technology and its applications in the areas of business.

Course Outcomes:

On Completion of the course, the students will be able to-	
CO1	Describe the fundamental hardware components that make up a computer's hardware and the role of each of these components.
CO2	Interpret, produce, and present work-related documents and information effectively and accurately
CO3	Critically examines, using data and figures (Analysis and Evaluation**).
CO4	Apply the techniques to prepare the slides
CO5	Create form letters in mail merge
CO6	Retrieve information and create reports from databases.

Course with focus on employability / entrepreneurship / Skill Development modules

Skill Development		Employability		Entrepreneurship	
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Syllabus:

UNIT I (14 Hours)

Introduction: Computer Definition - Characteristics and Limitations of Computer Hardware— Generations of Computer, Classification of Computers, Applications of Computer, Basic Components of PC, Computer Architecture - **Primary and Secondary Memories**- Input and Output Devices- Operating System- Function of Operating System- Types of Operating System- Languages and its Types.

Assignment: Develop a Case Study to evaluate various types of Memories.

UNIT II (12 Hours)

MS Word: Word Processing – **Features-Advantages and Applications**- Parts of Word Window- Toolbar- Creating, Saving, Closing, Opening and Editing of a Document-Moving and Coping a Text-Formatting of Text and Paragraph- Bullets and Numbering-Find and Replace - Insertion of objects-Headers and Footers- Page Formatting- Auto Correct- Spelling and Grammar- **Mail Merge**- Macros.

Assignment: Write Steps to create a Job Request Letter and Send the same to various Job Providers (Mail Merge)

UNIT III (12 Hours)

MS Excel: Features – Spread Sheet-Workbook – Cell-Parts of a window-Saving, Closing, Opening of a Work Book– Editing – Advantages – Formulas- Types of Function- Templates – Macros – Sorting- Charts – Filtering – Consolidation – **Grouping- Pivot Table.**

Assignment: Apply various Filters and Data Consolidation techniques on your class data and submit the report

UNIT IV (10 Hours)

MS Power point: Introduction – Starting – Parts-Creating of Tables- **Create Presentation** – Templates- Auto Content Wizard-Slide Show-Editing of Presentation-Inserting Objects and charts.

Assignment: Create the presentation about your college in 15 slides

UNIT V (12 Hours)

MS Access: Orientation to Microsoft Access - **Create a Simple Access Database** - Working with Table Data - Modify Table Data - Sort and Filter Records - Querying a Database - Create Basic Queries - Sort and Filter Data in a Query - Perform Calculations in a Query - **Create Basic Access Forms** - Work with Data on Access Forms - Create a Report - Add Controls to a Report - Format Reports.

Assignment: Write steps to create a form to store all your semester subject marks in the Database

Textbooks:

1. Introduction to Computers: Peter Norton, McGraw Hill.
2. Fundamentals of Information Technology: Dr. NVN Chary, Kalyani Publishers.
3. Computer Fundamental: AnithaGoel, Pearson.

Reference books:

1. Information Technology Applications for Business: Dr. S. Sudalaimuthu, Himalaya
2. Introduction to Information Technology: ITL ESL, Pearson.
3. Introduction to Information Technology: V. Rajaraman, PHI.

Web Links:

1. <https://support.microsoft.com/en-us/training>

ACTIVITIES:

1. Create and design a visiting card, Admission/Enquiry forms by using MSWord.
2. Create employee payroll system using MS Excel with various required formulas.

CO-PO Mapping:

(1: Slight [Low];

2: Moderate [Medium];

3:Substantial [High],

'-':No Correlation)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1													
CO2													
CO3													
CO4													
CO5													

Blue Print

S.No.	UNIT	Short 2 M	Essay 8 M	Weightage
1	I	2	2	20.8%
2	II	2	2	20.8%
3	III	2	2	20.8%
4	IV	1	2	18.75%
5	V	1	2	18.75%
		16	80	

GOVERNMENT COLLEGE (AUTONOMOUS), RAJAHMUNDRY

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DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS

I B.COM (Computer Applications)

Semester-I

INFORMATION TECHNOLOGY

MODEL QUESTION PAPER (W.E.F 2022-2023)

Time: 2 ½ Hrs.

Max Marks: 50 M

SECTION-A

Answer any FIVE of the following questions.

5X2=10M

1. What are the Applications of Computer?
2. Write about the parts of Word-Window.
3. What are the features of MS-Excel?
4. What are the features of MS-Power Point?
5. What are the basic queries in MS-Access?
6. What are the Basic Components of PC?
7. Write Types of Functions in MS-Excel.
8. What are the types of effects in Custom Animation?

SECTION-B

Answer FIVE questions.

5X8=40M

UNIT I

9. Explain about Computer Architecture.

(OR)

10. Explain about functions of Operating System and types of Operating Systems.

UNIT II

11. What are the Features, Advantages and Applications MS-Word

(OR)

12. Write the process how to prepare Progress Report of Students using Mail Merge.

UNIT III

13. How to Prepare Students Results Table with Total, Percentage and Pass/Fail using Formulas.

(OR)

14. Write the process for Sorting, Filtering, Consolidation and Grouping in MS-Excel.

UNIT IV

15. Write the process of how to prepare a power point presentation and slideshow.

(OR)


16. Write about different types of animations in MS-Power Point.

UNIT V

17. Write the process how to Create a Report, Add Controls to a Report and Format Reports in MS Access.

(OR)

18. Write the process how to create a Simple Access Database, Working with Table Data and Modify Table Data.


	Government College (Autonomous) Rajahmundry	Program & Semester			
Course Code CAP168	TITLE OF THE COURSE Information Technology	I B.Com (CA) (I Sem)			
Teaching	Hours Allocated: 30 (Lab)	L	T	P	C
Pre-requisites:		-	-	2	2

Objectives:

To acquire basic knowledge in Information Technology and its applications in the areas of business

List of Experiments/Syllabus:

1. Working with Menus & Tool Bars in Word processing
2. Creating Word processor document
3. Create Entering - Saving & printing the document
4. Create Editing & Formatting Text in document
5. Create Mail Merge and Macros in Word
6. Working with Menus & Tool bars in Spread sheet
7. Creating a worksheet in spread sheet
8. Working with Cell referencing in spread sheet
9. Worksheet to analyse data with graphs & Charts in spread sheet
10. Advanced tools: Functions – Formulae – Formatting numbers - Macros – Sorting- Filtering
11. Working with Menus & Tool bars in Power Point Presentation
12. Creating presentations in Power Point Presentation
13. Working with Adding - Editing and deleting slides in Power Point Presentation
14. Templates and manually creating presentation
15. Slide show – Saving - Opening and closing a Presentation –Types of slides - Slide Views - Formatting –Insertion of Objects and Charts in slides - Custom Animation and Transition

	Government College (Autonomous) Rajahmundry	Program & Semester			
Course Code CAP169	TITLE OF THE COURSE E-commerce and Web Designing	I B.Com (CA) (II Sem)			
Teaching	Hours Allocated: 60 (Theory)	L	T	P	C
Pre-requisites:	Basic Programming skills	3	1	-	3

Course Objectives:

1. The business development can be done through the e-commerce being the primary and the basic object.
2. Learn the language of the HTML, XML and CSS

Course Outcomes:

On Completion of the course, the students will be able to-

CO1	Analyze the impact of E-commerce on business models and strategy.
CO2	Describe the major types of E-commerce.
CO3	Identify the key security threats in the E-commerce environment.
CO4	Be able to use the HTML, XML languages
CO5	Runs the page he/she has designed using HTML, XML codes

Course with focus on employability / entrepreneurship / Skill Development modules

Skill Development		Employability		Entrepreneurship	
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Syllabus:

UNIT I (14 Hours)

Introduction: Meaning, Nature, Concepts, Advantages, Disadvantages and reasons for Transacting Online, Types of E-Commerce, e-commerce Business Models (Introduction , Key Elements of a Business Model And Categorizing Major E-Commerce Business Models), Forces Behind e-commerce. **Technology used in E-commerce:** The dynamics of World Wide Web and Internet (Meaning, Evolution And Features); Designing, Building and Launching e-commerce website (A systematic approach involving decisions regarding selection of hardware, software, outsourcing Vs. in-house development of a website).

UNIT II (12 Hours)

E-payment System: Models and methods of e-payments (Debit Card, Credit Card, Smart Cards, e- money), **Digital Signatures** (Procedure, Working And Legal Position), Payment Gateways, Online Banking (Meaning, Concepts, Importance, Electronic Fund Transfer, Automated Clearing House, Automated Ledger Posting), Risks Involved in e-payments.

UNIT III (10 Hours)

On-line Business Transactions: Meaning, Purpose, Advantages and Disadvantages of Transacting Online, E- Commerce Applications in Various Industries Like {Banking, Insurance, Payment of Utility Bills, Online Marketing, E-Tailing (Popularity, Benefits, Problems and Features), **Online Services** (Financial, Travel and Career), Auctions, Online Portal, Online Learning, Publishing and Entertainment} **Online Shopping** (Amazon, Snap Deal, Alibaba, Flipkart, etc.).

UNIT IV (10 Hours)

Website designing: Designing a home page, HTML document, Anchor tag Hyperlinks, Head and body section, Header Section, Title, Prologue, Links, Colorful Pages, Comment, Body Section, Heading Horizontal Ruler, Paragraph, Tabs, Images And Pictures, Lists and Their Types, Nested Lists, Table Handling. Frames: Frameset Definition, Frame Definition, Nested Framesets, Forms and Form Elements. **DHTML and Style Sheets:** Defining Styles, elements of Styles, linking a style sheet to a HTML Document, Inline Styles, External Style Sheets, Internal Style Sheets & Multiple Style Sheets.

UNIT V (10 Hours)

Security and Encryption: **Need and Concepts, E-Commerce Security Environment:** (Dimension, Definition and Scope Of E-Security), Security Threats in The E-Commerce Environment (Security Intrusions And Breaches, Attacking Methods Like Hacking, Sniffing, Cyber- Vandalism Etc.), Technology Solutions (Encryption, Security Channels Of Communication, Protecting Networks And Protecting Servers And Clients).

Textbooks:

1. Electronic Commerce : Greenstein and Feinman (TMH)
2. E-Commerce : Bhushan Dean – S. Chand
3. Web Publishing : MonicD'souza and J D'souza

Referencebooks:

1. Complete HTML : BPB
2. XML : Xavier (TMH)

WebLinks:

1. <https://nptel.ac.in/courses/110/105/110105083/>
2. <https://nptel.ac.in/courses/106/105/106105084/>

CO-POMapping:

(1: Slight [Low]; 2: Moderate [Medium]; 3: Substantial [High], '-': No Correlation)

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PSO 1	PSO 2	PSO 3
CO1													
CO2													
CO3													
CO4													
CO5													

Blue Print

S.No.	UNIT	Short 2 M	Essay 8 M	Weightage
1	I	2	2	20.8%
2	II	2	2	20.8%
3	III	2	2	20.8%
4	IV	1	2	18.75%
5	V	1	2	18.75%
		16	80	

GOVERNMENT COLLEGE (AUTONOMOUS), RAJAHMUNDRY

(Accredited by NAAC "A+" Grade)

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS

I B.COM (Computer Applications)

Semester-II

E-commerce and Web Designing

MODEL QUESTION PAPER (W.E.F 2022-2023)

Time: 2 ½ Hrs.

Max Marks: 50 M

Section-A

Answer any **FIVE** of the following questions. **5X2=10M**

1. Write about Types of E-Commerce.
2. What are the Risks Involved in e-payments?
3. What are the Advantages Transacting Online?
4. Write examples for Lists and their types.
5. Write the Definition and Scope of E-Security.
6. What are the features of WWW and Internet?
7. Write how to link a style sheet to a HTML Document.
8. What are the methods of e-Payments?

Section-B

Answer **FIVE** questions.

5X8=40M

UNIT I

9. Write about e-commerce Business Models.

(OR)

10. Explain about Designing, Building and Launching e-commerce website.

UNIT II

11. Explain about Digital Signatures.

(OR)

12. Explain about Online Banking.

UNIT III

13. Write about E-Tailing (Popularity, Benefits, Problems and Features).

(OR)

14. Write about Online Learning, Publishing and Entertainment.

UNIT IV

15. Write the code to design a web page with Form and form elements

(OR)


16. Write about Inline, External, Internal and Multiple Style Sheets.

UNIT V

17. Write about Security Threats in the E-Commerce Environment.

(OR)

18. Write about Technology Solutions for Security.


	Government College (Autonomous) Rajahmundry	Program & Semester			
Course Code CAP169P	TITLE OF THE COURSE E-commerce and Web Designing Lab	I B.Com (CA) (II Sem)			
Teaching	Hours Allocated: 40 (Lab)	L	T	P	C
Pre-requisites:	Basic Programming Skills	0	0	3	2

Objectives:

To provide skills to design interactive and dynamic web sites.

List of Experiments/Syllabus:

1. Write a HTML program illustrating text formatting.
2. Illustrate font variations in your HTML code.
3. Prepare a sample code to illustrate links between different sections of the page.
4. Create a simple HTML program to illustrate three types of lists.
5. Embed a real player in your web page.
6. Embed a calendar object in your web page.
7. Create an applet that accepts two numbers and perform all the arithmetic operations on them.
8. Create nested table to store your curriculum.
9. Create a form that accepts the information from the subscriber of a mailing system.
10. Create a form using form tags (assume the form and fields).
11. Create a webpage containing your bio-data (assume the form and fields).
12. Write a html program including style sheets.
13. Write a html program to include audio or video into webpage.
14. Write a html program to layers of information in web page.

	Government College (Autonomous) Rajahmundry	Program & Semester			
Course Code CAP170	TITLE OF THE COURSE Programming with C & C++	II B.Com (CA). (III Sem)			
Teaching	Hours Allocated: 60 (Theory)	L	T	P	C
Pre-requisites:		5	1	-	5

Course Objectives:

To learn the fundamental programming concepts and methodologies which are essential to building good C/C++ programs.

Course Outcomes:

On Completion of the course, the students will be able to-

CO1	Be familiar with programming environment of C and C++.
CO2	Analyze how C++ improves C with object-oriented features
CO3	Critically examines, using data and figures (Analysis and Evaluation).
CO4	Working in 'Outside Syllabus Area' under a Co-curricular Activity(Creativity) Planning of structure and content, writing, updating and modifying computer programs for user solutions
CO5	Exploring C programming and Design C++ classes for code reuse (Practicalskills***).

Course with focus on employability / entrepreneurship / Skill Development modules

Skill Development		Employability		Entrepreneurship	
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Syllabus:

UNIT I (14 Hours)

Introduction and Control Structures: History of 'C' - Structure of C program – C character set, Tokens, Constants, Variables, Keywords, Identifiers – C data types - C operators - Standard I/O in C - Applying if and Switch Statements.

UNIT II (14 Hours)

Loops And Arrays: Use of While, Do While and For Loops - Use of Break and Continue Statements - Array Notation and Representation - Manipulating Array Elements - Using Multi-

Blue Print

S.No.	UNIT	Short 2 M	Essay 8 M	Weightage
1	I	2	2	20.8%
2	II	2	2	20.8%
3	III	2	2	20.8%
4	IV	1	2	18.75%
5	V	1	2	18.75%
		16	80	

GOVERNMENT COLLEGE (AUTONOMOUS), RAJAHMUNDRY

(Accredited by NAAC "A+" Grade)

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS

I B.COM (Computer Applications)

Semester-I

Programming with C & C++

MODEL QUESTION PAPER (W.E.F 2022-2023)

Time: 2 ½ Hrs.

Max Marks: 50 M

Section-A

Answer any **FIVE** of the following questions. **5X2=10M**

1. Write the Structure of C program
2. Write about Break and Continue Statement.
3. What is recursion? Write an example program for recursion.
4. Write the Structure of C++ Program.
5. What is Inheritance? What are the types of Inheritance?
6. Write the Tokens and Constants in C Language.
7. Write Declaration and Initialization of String.
8. Write about operator overloading.

Section-B

Answer **FIVE** questions.

5X8=40M

UNIT I

9. Write about Data Types and Operators in C Language.
(OR)
10. Write about If and Switch Statement with examples.

UNIT II

11. Write about types of Loops in C Language with Flow Charts and example syntax.
(OR)
12. Write about Array Declaration and Initialization and write a C program for Addition of two arrays.

UNIT III

13. Write about different types of String handling functions
(OR)
14. Explain Call by Value and Call by Reference with examples.

UNIT IV

15. Explain about basic concepts of OOP.
(OR)


16. Write about Creating source file, Compiling and Linking.

UNIT V

17. Explain about types of Constructors.

(OR)

18. Explain about different types of Inheritances.

	Government College (Autonomous) Rajahmundry	Program & Semester			
Course Code CAP170P	TITLE OF THE COURSE Programming with C & C++	II B.Com (CA). (III Sem)			
Teaching	Hours Allocated: 40 (Lab)	L	T	P	C
Pre-requisites:		0	0	3	2

Objectives: List of Experiments/Syllabus:

1. Write a program to check whether the given number is Armstrong or not.
2. Write a program to find the sum of individual digits of a positive integer.
3. Write a program to generate the first n terms of the Fibonacci sequence.
4. Write a program to find both the largest and smallest number in a list of integer values
5. Write a program to demonstrate refaction of parameters in swapping of two integer values using
6. Call by Value&Call by Address
7. Write a program that uses functions to add two matrices.
8. Write a program to calculate factorial of given integer value using recursive functions
9. Write a program for multiplication of two N X N matrices.
10. Write a program to perform various string operations.
11. Write a program to search an element in a given list of values.
12. Write a program to sort a given list of integers in ascending order.


Referencebooks:

Programming in ANSI C by –E Balaguruswami-2nd Edition

Virtual LabLinks:

<http://ps-iiith.vlabs.ac.in/Introduction.html?domain=Computer%20Science>



	Government College (Autonomous) Rajahmundry	Program & Semester			
Course Code CAP171	TITLE OF THE COURSE Data Base Management System	II B.Com (CA). (IV Sem)			
Teaching	Hours Allocated: 60 (Theory)	L	T	P	C
Pre-requisites:	Basic Mathematics	5	1	-	5

Course Objectives:

Design & develop database for large volumes & varieties of data with optimized data processing techniques.

Course Outcomes:

On Completion of the course, the students will be able to-	
CO1	Understand basic database concepts, including the structure and operation of the relational data model.
CO2	Understand and successfully apply logical database design principles, including ER diagrams and database normalization
CO3	Model an application's data requirements using conceptual modeling tools like ER diagrams and design database schemas based on the conceptual model
CO4	Construct simple and moderately advanced database queries using Structured Query Language
CO5	Perform PL/SQL programming using concept of Cursor Management, Error Handling, Packages

Course with focus on employability / entrepreneurship / Skill Development modules

Skill Development		Employability		Entrepreneurship	
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Syllabus:

UNIT I (14 Hours)

Overview of Database Management System: Introduction, Data and Information, Database, Database Management System, Objectives of DBMS, Evolution of Database Management System, Classification of Database Management System.

UNIT II (12 Hours)

File-Based System: File Based System. Drawbacks of File-Based System, DBMS Approach, Advantage of DBMS, Data Models, Components of Database System, Database Architecture, DBMS Vendors and their products.

UNIT III (12 Hours)

Entity-Relationship Model: Introduction, The Building Blocks of an Entity-Relationship, Classification of Entity Set, Attribute Classification, Relationship Degree, Relationship Classification, Generalization and Specialization, Aggregation and Composition, CODD's Rules, Relational Data Model, Concept of Relational Integrity.

UNIT IV (12 Hours)

Structured Query Language: Introduction, History of SQL Standards, Commands in SQL, Data types in SQL, Data Definition Language (DDL), Selection Operation Projection Operation, Aggregate Functions, Data Manipulation Language, Table Modification, Table Truncation, Imposition of Constraints, Set Operations.

UNIT V (12 Hours)

PL/SQL: Introduction, Structure of PL/SQL, PL/SQL Language Elements, Data Types, Control Structure, Steps to Create a PL/SQL Program, Iterative Control Cursors, Steps to Create a Cursor, Procedure, Functions, Packages, Exceptions Handling, Database Triggers, Types of triggers.

Text books:

1. Paneerselvam: Database Management system, PHI.
2. David Kuklinski, Osborne, Data management system McGraw Hill Publication.
3. Shgirley Neal And Kenneth LC Trunik Database management system in Business-PHI.
4. Godeon C. EVEREST, Database Management-McGraw Hill Book Company.
5. MARTIN, Database Management-Prentice Hall of India, New Delhi.
6. Bipin C. Desai, `An Introduction to Database System`, Galgotia Publications.
7. Korth, Database Management System.
8. Navathe, Database Management System.
9. S. Sumathi, S. Esakkirajan, Fundamentals of Relational Database Management System

Reference books:

1. Principles of Database Systems by J. D. Ullman
2. Fundamentals of Database Systems by R. Elmasri and S. Navathe
3. SQL: The Ultimate Beginners Guide by Steve Tale.

Web Links:

<http://www.onlinegdb.com>
[m/ http://learnsql.com](http://learnsql.com)
<https://www.codecademy.com/learn/len-sql/>

CO-PO Mapping:

(1:Slight[Low]; 2:Moderate[Medium]; 3:Substantial[High], '-' :No Correlation)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1													
CO2													
CO3													
CO4													
CO5													

Blue Print

S.No.	UNIT	Short 2 M	Essay 8 M	Weightage
1	I	2	2	20.8%
2	II	2	2	20.8%
3	III	2	2	20.8%
4	IV	1	2	18.75%
5	V	1	2	18.75%
		16	80	

GOVERNMENT COLLEGE (AUTONOMOUS), RAJAHMUNDRY

(Accredited by NAAC "A+" Grade)

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS

I B.COM (Computer Applications)

Semester-IV

Data Base Management System

MODEL QUESTION PAPER (W.E.F 2022-2023)

Time: 2 ½ Hrs.

Max Marks: 50 M

Section-A

Answer any **FIVE** of the following questions.

5X2=10M

- 1.What is the difference between Data and Information?
- 2.Write the advantages of DBMS.
- 3.Write about classification of Entity Set?
- 4.What are the Data Types in SQL?
- 5.Write the steps to create PL/SQL program.
- 6.What are the components of DBMS?
- 7.What is the Concept of Relational Integrity?
- 8.Write about Cursors.

Section-B

Answer **FIVE** questions.

5X8=40M

UNIT I

- 9.Explain about Classification of Database Management System.

(OR)

- 10.Explain about Objectives of Database Management System.

UNIT II

11. Explain about Data Models.

(OR)

12. Explain about Database architecture.

UNIT III

13. Explain about Aggregation and Composition.

(OR)

14. Explain about concepts of ER Model with an example.

UNIT IV

15. Explain about Data Definition Language commands with syntax.

(OR)


16. Explain the aggregate functions in SQL with syntax.

UNIT V

17. Explain about Exception Handling with example program.

(OR)

18. Explain about different types of Triggers.

	Government College (Autonomous) Rajahmundry	Program & Semester			
Course Code CAP171P	TITLE OF THE COURSE Data Base Management System Lab	II B.Com (CA). (IV Sem)			
Teaching	Hours Allocated: 40 (Lab)	L	T	P	C
Pre-requisites:		0	0	3	2

Objectives:


List of Experiments/Syllabus:

1. Draw ER diagrams for train services in a railway station
2. Draw ER diagram for hospital administration
3. Creation of college database and establish relationships between tables
4. Write a view to extract details from two or more tables
5. Write a stored procedure to process students results
6. Write a program to demonstrate a function
7. Write a program to demonstrate blocks, cursors & database triggers.
8. Write a program to demonstrate Joins
9. Write a program to demonstrate of Aggregate functions
10. Creation of Reports based on different queries
11. Usage of file locking table locking, facilities in applications

Virtual Lab Links:

<http://vlabs.iitb.ac.in/vlabs-dev/labs/dblab/index.php>



	Government College (Autonomous) Rajahmundry	Program & Semester			
Course Code CAP171	TITLE OF THE COURSE Object Oriented Programming using JAVA	II B.Com (CA). (IV Sem)			
Teaching	Hours Allocated: 60 (Theory)	L	T	P	C
Pre-requisites:		3	1	-	3

Course Objectives:

1. To learn and understand fundamental concepts of Object-Oriented Programming
2. To design and implement Object Oriented Programming concepts in JAVA
3. To understand how object-oriented concepts are incorporated into the Java Programming Language
4. To create and use packages and applets

Course Outcomes:

On Completion of the course, the students will be able to-	
CO1	Understand the concept and underlying principles of Object-Oriented Programming
CO2	Implement Object Oriented Programming Concepts (Class, Constructor, Overloading, Inheritance, Overriding) in JAVA
CO3	Create and use interfaces in JAVA
CO4	Implement Multithreading, Exception handling in JAVA
CO5	Create and use packages and Applets

Course with focus on employability / entrepreneurship / Skill Development modules

Skill Development		Employability		Entrepreneurship	
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Syllabus:

UNIT I (14 Hours)

Fundamentals Of Object – Oriented Programming: Introduction, Object Oriented paradigm, Basic Concepts of OOP, Benefits of OOP, Applications of OOP, Java features.

Overview Of Java Language: Simple Java program structure, Java tokens, Implementing a Java Program, Java Virtual Machine, Command line arguments.

Constants, Variables & Data types: Constants, Variables, Data Types, Declaration of Variables, Giving Value to Variables, Getting Value of Variables, Operators in Java.

UNIT II (14 Hours)

Arrays, Strings: Arrays, One-dimensional arrays, Two – dimensional arrays, Strings.

Decision Making& Branching: Decision making with if statement- Simple if statement, If -Else statement, Nesting of if- else statements, The else if ladder, The switch statement, The conditional operator.

Looping: The While statement, The do-while statement, The for statement.

UNIT III (14 Hours)

Classes, Objects Methods: Defining a class, Adding variables, Adding methods, Creating objects, Accessing class members, Constructors, Method overloading, Static members.

Inheritance: Extending a class, Overriding methods, Final variables and methods, Final classes, Abstract methods and classes.

Interfaces: Introduction to multiple inheritance, Defining interfaces, Extending interfaces, implementing interface.

UNIT IV (14 Hours)

Multithreaded Programming: Creating Threads, Extending the Threads, Stopping and Blocking a Thread, Life cycle of a Thread, Using Thread Methods.

Managing Errors And Exceptions: Types of errors, Compile-time errors, Run-time errors, Exceptions, Exception handling, Multiple Catch Statements, Using finally statement.

Model Blue print for the question paper setter

Blue Print				
S.No.	UNIT	Short 2 M	Essay 8 M	Weightage
1	I	2	2	20.8%
2	II	2	2	20.8%
3	III	2	2	20.8%
4	IV	1	2	18.75%
5	V	1	2	18.75%
		16	80	

GOVERNMENT COLLEGE (AUTONOMOUS), RAJAHMUNDRY

(Accredited by NAAC "A+" Grade)

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS

II B.COM (Computer Applications)

Semester-IV

Object Oriented Programming using JAVA

MODEL QUESTION PAPER (W.E.F 2022-2023)

Time: 2 ½ Hrs.

Max Marks: 50 M

SECTION-A

Answer any **FIVE** of the following:

5X2M=10M

1. What are the benefits of Object Oriented Programming
2. Explain different data types in JAVA
3. Define if statement with an example
4. What is Over riding method and give an example
5. Define one-dimensional array
6. Write short notes on threads
7. Define local and remote applets
8. Define class and object

SECTION-B

Answer the following question

5X8=40 M

UNIT I

9. Explain the basic concepts of Object Oriented Programming

(OR)

10. Explain different operators in JAVA

UNIT II

11. Explain Looping Statement in JAVA ? Write a programming using for statement

(OR)

12. Explain about decision making and branching statements in Java with examples.

UNIT III

13. Briefly explain about final, finally and finalize keywords

(OR)

14. Explain interface with an example

UNIT IV

15. Explain Life cycle of a Thread with an example

(OR)


16. Discuss different types of exception handlings

UNIT V

17. Explain Applet Life Cycle with an example

(OR)


18. Explain JAVA API packages

	Government College (Autonomous) Rajahmundry	Program & Semester			
Course Code CAP171	TITLE OF THE COURSE Object Oriented Programming using JAVA(Lab)	II B.Com (CA).(IV Sem)			
Teaching	Hours Allocated: 60 (Theory)	L	T	P	C
Pre-requisites:		-	-	2	2

Objectives:

Details of Lab Syllabus:

1. Java program to generate Harmonic Series ($1/1+1/2+\dots+1/n$).
2. Java program to display even, odd numbers and their sum upto given number n.
3. Java program to find a sub string in the given string.
4. Java program to arrange the given strings in Alphabetic Order.
5. Java program to implement Addition and multiplication of two Matrices.
6. Java program to demonstrate the use of Constructor.
7. Java program to implement method overloading.
8. Java program to demonstrate Method overriding.
9. Java program for single Inheritance.
10. Java program for implementing Interface.
11. Java program on Multiple Inheritance.
12. Java program to implement Threads.
13. Java program to demonstrate Exception handling.
14. Java program to demonstrate Applets

	Government College (Autonomous) Rajahmundry	Program & Semester			
Course Code CAP155	TITLE OF THE COURSE BIGDATA ANALYTICS USING R (Skill Enhancement Course (Elective))	IIIB.Com (CA). (V Sem)			
Teaching	Hours Allocated: 60 (Theory)	L	T	P	C
Pre-requisites:		3	1	-	3

Course Objectives:

1. To examine large amounts of data to uncover hidden patterns, correlations and other insights
2. Understand to extract meaningful insights, such as hidden patterns
3. To store, transform and analyse the data
4. Organize data to complex process of examining big data
5. Large data analysis to help companies

Course Outcomes:

On Completion of the course, the students will be able to-	
CO1	Understand data and classification of digital data.
CO2	Understand Big Data Analytics.
CO3	Load data in to R.
CO4	Organize data in the form of R objects and manipulate them as needed.
CO5	Perform analytics using R programming.

Course with focus on employability / entrepreneurship / Skill Development modules

Skill Development		Employability		Entrepreneurship	
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Syllabus:

UNIT I (12 Hours)

Introduction to Big data: Data, classification Of Digital Data--structured, unstructured, semi-structured data, characteristics of data, evaluation of big data, definition and challenges of big data,

what is big data and why to use big data?, business intelligence Vs. big data.

UNIT II (12 Hours)

Big data Analytics: What is and isn't big data analytics? Why hype around big data analytics? Classification of analytics, top challenges facing big data, importance of big data analytics, technologies needed to meet challenges of big data.

UNIT III (12 Hours)

Introduction to R and getting started with R: What is R? Why R? , advantages of R over other programming languages, Data types in R-logical, numeric, integer, character, double, complex, raw, coercion, ls() command, expressions, variables and functions, control structures, Array, Matrix, Vectors, R packages.

UNIT IV (12 Hours)

Exploring data in R: Data frames-data frame access, ordering data frames, R functions for data frames dim(), nrow(), ncol(), str(), summary(), names(), head(), tail(), edit() .Load data frames—reading from .CSV files, sub setting data frames, reading from tab separated value files, reading from tables.

UNIT V (12 Hours)

Data Visualization using R : Reading and getting data into R (External Data): XML files, Web Data, JSON files, Databases, Excel files. **Working with R Charts and Graphs:** Histograms, Bar Charts, Line Graphs, Scatterplots, Pie Charts

Textbooks:

1. Seema Acharya , Subhashini Chellappan --- Big Data And Analytics second edition, Wiley
2. Seema Acharya--Data Analytics using R, McGraw Hill education (India) Private Limited.
3. Big Data Analytics, Introduction to Hadoop, Spark, and Machine-Learning, Rajkamal, Preeti Saxena, McGraw Hill, 2018.
4. Big Data, Big Analytics: Emerging Business intelligence and Analytic trends for Today's

Business, Michael Minelli, Michelle Chambers, and Ambiga Dhiraj, John Wiley & Sons,
2013

Reference books:

An Introduction to R, Notes on R: A Programming Environment for Data Analysis and Graphics.

W. N. Venables, D.M. Smith and the R Development Core Team

Web Links:

CO-PO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1													
CO2													
CO3													
CO4													
CO5													

Blue Print				
S.No.	UNIT	Short 2 M	Essay 8 M	Weightage
1	I	2	2	20.8%
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		16	80	

GOVERNMENT COLLEGE (AUTONOMOUS), RAJAHMUNDRY

(Accredited by NAAC "A+" Grade)

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS

III B.COM (Computer Applications)

Semester-V

BIGDATA ANALYTICS USING R

MODEL QUESTION PAPER (W.E.F 2022-2023)

Time: 2 ½ Hrs.

Max Marks: 50 M

SECTION-A

Answer any FIVE of the following questions.

5X2=10M

1. Difference between Business Intelligence and Big Data
2. What are the importance of Big Data Analytics
3. What are the classifications of Big Data Analytics
4. What are the advantages of R Programming
5. Explain R Packages
6. Explain Built-in functions in R Programming
7. Explain Database in R Programming
8. Explain Arrays and Vectors in R Programming

SECTION-B

Answer FIVE questions.

4X8=40M

UNIT I

9. Explain the Classifications and uses of Big Data
(OR)
10. Explain structured, unstructured and semi-structured data in Big Data

UNIT II

11. What are the top challenges facing big data
(OR)
12. What are the technologies needed to meet the challenges of Big Data

UNIT III

13. Explain the data types in R Programming
(OR)
14. Explain control structures in R Programming

(
UNIT IV

15. Explain Data frames and R functions for data frames in R Programming
(OR)
16. Explain R Programming can read and write into various file formats


UNIT V

17. Explain Charts and Graphs in R Programming
(OR)
18. Explain JSON ,XML and Excel files reading and getting data into R Programming

	Government College (Autonomous) Rajahmundry	Program & Semester			
Course Code CAP155	TITLE OF THE COURSE Big Data Analytics Using RLab	IIIB.Com (CA). (V Sem)			
Teaching	Hours Allocated: 30 (Practical)	L	T	P	C
Pre-requisites:	DBMS	-	-	2	2

Syllabus:

1. Create a vector in R and perform operations on it.
2. Create integer, complex, logical, character data type objects in R and print their values and their class using print and class functions.
3. Write code in R to demonstrate sum(), min(), max() and seq() functions.
4. Write code in R to manipulate text in R using grep(), toupper(), tolower() and substr() functions.
5. Create data frame in R and perform operations on it.
6. Import data into R from text and excel files using read.table () and read.csv () functions.
7. Write code in R to find out whether number is prime or not.
8. Print numbers from 1 to 100 using while loop and for loop in R.
9. Write a program to import data from csv file and print the data on the console.
10. Write a program to demonstrate histogram in R.

	Government College (Autonomous) Rajahmundry	Program & Semester			
Course Code CAP155	TITLE OF THE COURSE DATA SCIENCE USING PYTHON (Skill Enhancement Course (Elective))	IIIB.Com (CA). (V Sem)			
Teaching	Hours Allocated: 60 (Theory)	L	T	P	C
Pre-requisites:	Basic Programming in C	3	1	-	3

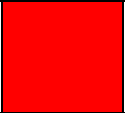
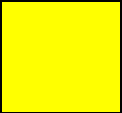

Course Objectives:

1. To introduce the students with basic principles of data science
2. To learn the data science using Python to construct the means for extracting business-focused insights from data.
3. To train the students on data Science to extract valuable information for use in strategic decision making, product development, trend analysis, and forecasting.

Course Outcomes:

On Completion of the course, the students will be able to-	
CO1	Understand basic concepts of data science
CO2	Understand why python is a useful scripting language for developers.
CO3	Use standard programming constructs like selection and repetition.
CO4	Use aggregated data (list, tuple, and dictionary).
CO5	Implement functions and modules

Course with focus on employability / entrepreneurship / Skill Development modules

Skill Development		Employability		Entrepreneurship	
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Syllabus:

UNIT I (12 Hours)

Introduction to data science: Data science and its importance, advantages of data science, the process of data science, Responsibilities of a data scientist, qualifications of data scientists, would you be a good data scientist, why to use python for data science.

UNIT II (12 Hours)

Introduction to python: What is python , features of python, history of python, writing and executing the python program, basic syntax, variables, keywords, data types ,operators ,indentation,

Conditional statements: if, if-else, nested if-else, looping statements-for, while, break, continue, pass

UNIT III (12 Hours)

Control structures and strings: Strings - definition, accessing, slicing and basic operations. Lists - introduction, accessing list, operations, functions and methods,

Tuples - introduction, accessing tuple. **Dictionaries** - introduction, accessing values in dictionaries

UNIT IV (12 Hours)

Functions and modules: Functions - defining a function, calling a function, types of functions, function arguments, local and global variables, lambda and recursive functions, **Modules-** math and random.

UNIT V (12 Hours)

Classes & Objects: Classes and Objects, Class method and self-argument, class variables and object variables, public and private data members, private methods, built-in class attributes, static methods.

Textbooks:

1. Steven cooper--- Data Science from Scratch, Kindle edition
2. Reemathareja—Python Programming using problem solving approach, Oxford Publication

Reference books:

Web Links:**CO-PO Mapping:**

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1													
CO2													
CO3													
CO4													
CO5													

Blue Print

S.No.	UNIT	Short 2 M	Essay 8 M	Weightage
1	I	2	2	20.8%
2	II	2	2	20.8%
3	III	2	2	20.8%
4	IV	1	2	18.75%
5	V	1	2	18.75%
		16	80	

GOVERNMENT COLLEGE (AUTONOMOUS), RAJAHMUNDRY

(Accredited by NAAC "A+" Grade)

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS

III B.COM (Computer Applications)

Semester-V

DATA SCIENCE USING PYTHON

MODEL QUESTION PAPER (W.E.F 2022-2023)

Time: 2 ½ Hrs.

Max Marks: 50 M

SECTION-A

Answer any FIVE of the following questions.

5X2=10M

1. Explain the process of Data Science
2. Why need to use Data Science
3. Explain the features of Python
4. Explain Conditional statement in Python
5. Explain Tuples in Python
6. Explain Built-in functions in Python.
7. What is class variable in Python.
8. Explain Static methods in Python

SECTION-B

Answer FIVE questions.

5X8=40M

UNIT I

9. Explain the importance and advantages of Data Science
- (OR)**
10. What are the Responsibilities and Qualifications of Data Scientist

UNIT II

11. Explain data types and operators in Python
- (OR)**
12. Explain looping statements in Python

UNIT III


13. What are the operations, functions and methods used in Lists
(OR)
14. What are the operations, functions and methods used in Lists

UNIT IV

15. Explain Strings in Python
(OR)
16. What are the operations, functions and methods used in Lists


UNIT V

17. Explain Classes and Objects, Class method and self-argument, class variables and object variables in Python
(OR)
18. Explain public and private data members, private methods, built-in class attributes.

	Government College (Autonomous) Rajahmundry	Program & Semester			
Course Code CAP155	TITLE OF THE COURSE Data Science Using Python	IIIB.Com (CA). (V Sem)			
Teaching	Hours Allocated: 60 (Practical)	L	T	P	C
Pre-requisites:	Basic Programming	-	-	2	2

Syllabus:

1. Python Program to Find the Square Root
2. Python Program to Swap Two Variables
3. Python Program to Generate a Random Number
4. Python Program to Check if a Number is Odd or Even
5. Python Program to Find the Largest Among Three Numbers
6. Python Program to Check Prime Number
7. Python Program to Display the multiplication Table
8. Python Program to Print the Fibonacci sequence
9. Python Program to Find the Sum of Natural Numbers
10. Python Program to Find Factorial of Number Using Recursion
11. Python Program to work with string methods.
12. Python Program to create a dictionary and print its content.
13. Python Program to create class and objects.

	Government College (Autonomous) Rajahmundry	Program & Semester			
Course Code CAP155	TITLE OF THE COURSE MOBILE APPLICATION DEVELOPMENT	IIIB.Com (CA). (V Sem)			
Teaching	Hours Allocated: 60 (Theory)	L	T	P	C
Pre-requisites:	JAVA	3	1	-	3

Course Objectives:

1. To learn application development on the Android platform.
2. To improve efficiency through better time saving and utilisation.
3. To transform your business processes.
4. To increase customer engagement and customer satisfaction.
5. Improve productivity through improved communications, task completion and management.

Course Outcomes:

On Completion of the course, the students will be able to-	
CO1	Identify basic terms ,tools and software related to android systems
CO2	Describe components of IDE, understand features of android development tools
CO3	Describe the layouts and controls
CO4	Explain the significance of displays using the given view
CO5	Explain the features of services and able to publish android Application
CO6	Developing interesting Android applications using MIT App Inventor

Course with focus on employability / entrepreneurship / Skill Development modules

Skill Development		Employability		Entrepreneurship	
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Syllabus:

UNIT I (12 Hours)

Introduction to Android, open headset alliance, Android Ecosystem, Need of Android, Features of Android, Tools and software required for developing an Application.

UNIT II (12 Hours)

Operating system, java JDK, Android SDK, Android development tools, Android virtual devices, steps to install and configure Android studio and sdk, Android activities.

UNIT III (12 Hours)

Control flow, directory structure, components of a screen, fundamental UI design, linear layout, absolute layout , table layout, text view, edit text, button, image button, radio button, radio group, check box, and progress bar, list view, grid view, image view, scroll view, time and date picker, toast.

UNIT IV (12 Hours)

Android platform services, Android system Architecture, Android Security model

UNIT V (12 Hours)

Introduction of MIT App Inventor, Application Coding, Programming Basics & Dialog, Audio& Video, File

Textbooks:

1. Erik Hellman, “Android Programming – Pushing the Limits”, 1st Edition, Wiley India PvtLtd, 2014.
2. App Inventor: create your own Android apps by Wolber, David (David Wayne)

Reference books:

1. Dawn Griffiths and David Griffiths, “Head First Android Development”, 1st Edition, O’Reilly SPD Publishers, 2015.
2. J F DiMarzio, “Beginning Android Programming with Android Studio”, 4th Edition, Wiley India Pvt Ltd, 2016. ISBN-13: 978-8126565580

3. Anubhav Pradhan, Anil V Deshpande, “ Composing Mobile Apps” using Android, Wiley2014, ISBN: 978-81-265-4660-2
4. Android Online Developers Guide

Web Links:

1. <http://developer.android.com/reference/> Udacity: Developing Android
2. Apps- Fundamentals
3. <https://www.udacity.com/course/developing-android-appsfundamentals--ud853-nd>
<http://www.appinventor.mit.edu/>

CO-PO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1													
CO2													
CO3													
CO4													
CO5													

Blue Print

S.No.	UNIT	Short 2 M	Essay 8 M	Weightage
1	I	2	2	20.8%
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		16	80	

GOVERNMENT COLLEGE (AUTONOMOUS), RAJAHMUNDRY

(Accredited by NAAC "A+" Grade)

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS

III B.COM (Computer Applications)

Semester-V

BIGDATA ANALYTICS USING R

MODEL QUESTION PAPER (W.E.F 2022-2023)

Time: 2 ½ Hrs.

Max Marks: 50 M

SECTION-A

Answer any FIVE of the following questions.

5X2=10M

1. What is the Need of Android
2. Explain Android Ecosystem
3. Explain Android Virtual Devices
4. Explain JDK in java and Android SDK
5. Explain Radio button, Check box and Image button
6. Explain Android Security Model
7. Explain Control flow and Directory structure in Android
8. Explain Audio and Video in Android

SECTION-B

Answer FIVE questions.

4X8=40M

UNIT I

9. Explain the features of Android

(OR)

10. Explain Tools and Software required for developing an Application

UNIT II

11. Explain Android Development Tools

(OR)

12. How to Install and Configure Android Studio and SDK

UNIT III

13. Explain the components of a screen in Android

(OR)

14. Explain List View, Grid View, Image View and Scroll View

UNIT IV

15. Explain Android Platform Services

(OR)

16. Explain the Architecture of Android System

UNIT V

17. Explain MIT App Inventor

(OR)

18. Explain Programming Basics in Android

	Government College (Autonomous) Rajahmundry	Program & Semester			
Course Code CAP155	TITLE OF THE COURSE Mobile Application Development: Lab (Practical)	IIIB.Com (CA). (V Sem)			
Teaching	Hours Allocated: 60 (Practical)	L	T	P	C
Pre-requisites:	JAVA	-	-	2	2

syllabus:

Experiments:

1. Demonstrate mobile technologies and devices
2. Demonstrate Android platform and applications overview
3. Working with texts , shapes, buttons and lists
4. Develop a calculator application
5. Implement an application that creates a alarm clock

	Government College (Autonomous) Rajahmundry	Program & Semester			
Course Code CAP155	TITLE OF THE COURSE CYBER SECURITY AND MALWARE ANALYSIS	IIIB.Com (CA). (V Sem)			
Teaching	Hours Allocated: 60 (Theory)	L	T	P	C
Pre-requisites:		4	1	2	6

Course Objectives:

1. To understand the basics of computer architecture and operating system.
2. To study resource management activities operating system.
3. To acquire knowledge about OS design issues.
4. To learn and understand operating system policies and mechanisms

Course Outcomes:

On Completion of the course, the students will be able to-

CO1	Understand the computer networks, networking tools and cyber security
CO2	Learn about NIST Cyber Security Framework
CO3	Understand the OWASP Vulnerabilities
CO4	Implement various Malware analysis tools
CO5	Understand about Information Technology act 2000

Course with focus on employability / entrepreneurship / Skill Development modules

Skill Development		Employability		Entrepreneurship	
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Syllabus:

UNIT I (12 Hours)

Introduction to Networks & cyber security: Computer Network Basics, Computer network types, OSI Reference model, TCP/IP Protocol suite, Difference between OSI and TCP/IP, What is cyber,

cyber-crime and cyber-security, All Layer wise attacks, Networking devices: router, bridge, switch, server, firewall, How to configure: router, How to create LAN

UNIT II (12 Hours)

NIST Cyber security framework: Introduction to the components of the framework, Cyber security Framework Tiers, What is NIST Cyber security framework, Features of NIST Cyber security framework, Functions of NIST Cyber security framework, Turn the NIST Cyber security Framework into Reality/ implementing the framework

UNIT III (12 Hours)

OWASP: What is OWASP?, OWASP Top 10 Vulnerabilities: Injection, Broken Authentication, Sensitive Data Exposure, XML External Entities (XXE), Broken Access Control, Security Misconfiguration, Cross-Site Scripting (XSS), **Insecure Deserialization**, Using Components with Known Vulnerabilities, Insufficient Logging and Monitoring, Web application firewall

UNIT IV (12 Hours)

MALWARE ANALYSIS: What is malware, Types of malware: Key loggers, Trojans, Ran some ware, Rootkits, Antivirus, Firewalls, Malware analysis: VM ware, How to use sandbox, Process explorer, Process monitor

UNIT V (12 Hours)

CYBER SECURITY: Legal Perspectives: Cybercrime and the legal landscape around the world, Indian IT ACT 2000 --Cybercrime and Punishments, Challenges to Indian law and cybercrime scenario in India

Textbooks:

1. Computer Networks | Fifth Edition | By Pearson (6th Edition)|Tanenbaum, Feamster &Wetherill
2. Computer Networking | A Top-Down Approach | Sixth Edition | By Pearson | KuroseJames F. Ross Keith W.
3. Cyber Security by Sunit Belapure, Nina Godbole|Wiley Publications

Reference books:

1. TCP/IP Protocol Suite |Mcgraw-hill| Forouzan|Fourth Edition

Web Links:

- <https://csrc.nist.gov/Projects/cybersecurity-framework/nist-cybersecurity-framework-a-quick-start-guide>
- <https://owasp.org/www-project-top-ten/>
- <https://owasp.org/www-project-juice-shop/>

CO-PO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1													
CO2													
CO3													
CO4													
CO5													

Blue Print				
S.No.	UNIT	Short 2 M	Essay 8 M	Weightage
1	I	2	2	20.8%
2	II	2	2	20.8%
3	III	2	2	20.8%
4	IV	1	2	18.75%
5	V	1	2	18.75%
		16	80	

GOVERNMENT COLLEGE (AUTONOMOUS), RAJAHMUNDRY

(Accredited by NAAC "A+" Grade)

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS

III B.COM (Computer Applications)

Semester-V

CYBER SECURITY AND MALWARE ANALYSIS

MODEL QUESTION PAPER (W.E.F 2022-2023)

Time: 2 ½ Hrs.

Max Marks: 50 M

SECTION-A

Answer any FIVE of the following questions.

5X2=10M

1. What are the types of computer networks
2. What is Cyber-crime and Cyber -security
3. What is NIST Cyber security framework
4. Explain Cyber security Framework Tiers
5. Explain Broken Access Control
6. What is Security Configuration
7. What is Antivirus
8. What is legal landscape in Cyber-crime

SECTION-B

Answer FIVE questions.

5X8=40M

UNIT I

9. Explain OSI Reference Model
10. Explain the basics of Computer Networks

(OR)

UNIT II

11. Explain the functions of NIST Cyber security framework
12. Explain the features of NIST Cyber-security framework

(OR)

UNIT III

13. Explain OWASP Top 10 Vulnerabilities
14. Explain XML External Entities and Cross-Site Scripting

(OR)

UNIT IV

15. Explain the types of Malware

(OR)

16. Explain Malware Analysis

UNIT V

17. Explain the Challenges to Indian law and Cybercrime scenario in India


(OR)

18. Explain Indian IT Act 2000? Define Cybercrime and Punishment

	Government College (Autonomous) Rajahmundry	Program & Semester			
Course Code CAP155	TITLE OF THE COURSE Cyber Security and Malware Analysis; Lab (Practical)	IIIB.Com (CA). (V Sem)			
Teaching	Hours Allocated: 60 (Practical)	L	T	P	C
Pre-requisites:		-	-	2	2

Experiments:

1. Configure a LAN by using a switch
2. Configure a LAN by using Router
3. Perform the packet sniffing mechanism by download the “wire shark” tool and extract the packets
4. Perform an SQL Injection attack and its preventive measure to avoid Injection attack

	Government College (Autonomous) Rajahmundry	Program & Semester			
Course Code CAP155	TITLE OF THE COURSE E- COMMERCE APPLICATION DEVELOPMENT	IIIB.Com (CA). (V Sem)			
Teaching	Hours Allocated: 60 (Theory)	L	T	P	C
Pre-requisites:	E-Commerce	3	1	-	3




Course Objectives:

1. E-Commerce on business development and strategy, technological innovations, and social and legal issues
2. E-commerce technology infrastructure, business concepts, social issues and real world experiences
3. E-Commerce Models – Business to Business
4. Electronic Data Interchange

Course Outcomes:

On Completion of the course, the students will be able to-	
CO1	To apply in an integrative and summative fashion the students' knowledge in all fields of business studies by drafting a website presence plan.
CO2	To understand the factors needed in order to be successful in e-commerce
CO3	To gain the skills to bring together knowledge gathered about the different components of building a web presence
CO4	To critically think about problems and issues that might pop up during the establishment of the web presence
CO5	To apply Word Press as a content management system (CMS), Plan their website by choosing colour schemes, fonts, layouts, and more

Course with focus on employability / entrepreneurship / Skill Development modules

Skill Development		Employability		Entrepreneurship	
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Syllabus:

UNIT I (12 Hours)

Introduction to E- commerce: Meaning and concept – E- commerce, E- commerce v/s Traditional Commerce, Business & E- Commerce – History of E- Commerce, EDI – Importance, features & benefits of E- Commerce, Impacts, Challenges & Limitations of E- Commerce

UNIT II (12 Hours)

Business models of E – Commerce: Business to Business, Business to customers ,Customers to Customers, Business to Government, Business to Employee, Influencing factors of successful E- Commerce, Architectural framework of Electronic Commerce, Web based E Commerce Architecture, Internet Commerce.

UNIT III (12 Hours)

Electronic data Interchange: EDI Technology, EDI –Communications, EDI- Agreements, E- Commerce payment system, Digital Economy.

UNIT IV (12 Hours)

A Page on the web - HTML Basics: Client Side scripting -JAVA SCRIPT basics, Server side Scripting- PHP basics.

UNIT V (12 Hours)

Logging in to Your Word press Site, word press dash board, creating your first post, adding photos and images, creating hyper link, adding categories and tags.

Textbooks:

1. Turban, Rainer, and Potter, Introduction to E-Commerce, second edition, 2003
2. H. M. Deitel, P. J. Deitel and T. R. Nieto, E-Business and E-Commerce: How to Programe, Prentice hall, 2001
3. WordPress All-in-One For Dummies -written by Lisa Sabin Wilson withcontributions by Michael Torbert, Andrea Rennick, Cory Miller, and Kevin Palmer

Reference books:

1. Elias. M. Awad, "Electronic Commerce", Prentice-Hall of India Pvt Ltd.
2. Ravi Kalakota, Andrew B. Whinston, "Electronic Commerce-A Manager's guide", Addison-Wesley
3. <https://w3cschools.com>
4. David Whiteley, E-Commerce: Strategy, Technologies and Applications, Tata McGrawHill.

Web Links:

CO-PO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1													
CO2													
CO3													
CO4													
CO5													

Blue Print

S.No.	UNIT	Short 2 M	Essay 8 M	Weightage
1	I	2	2	20.8%
2	II	2	2	20.8%
3	III	2	2	20.8%
4	IV	1	2	18.75%
5	V	1	2	18.75%
		16	80	

GOVERNMENT COLLEGE (AUTONOMOUS), RAJAHMUNDRY

(Accredited by NAAC "A+" Grade)

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS

III B.COM (Computer Applications)

Semester-V

E- COMMERCE APPLICATION DEVELOPMENT MODEL QUESTION PAPER (W.E.F 2022-2023)

Time: 2 ½ Hrs.

Max Marks: 50 M

SECTION-A

Answer any FIVE of the following questions.

5X2=10M

1. Difference between E-Commerce V/s Traditional Commerce
2. What are the Limitations of E-Commerce
3. What is EDI Technology
4. What is Digital Economy
5. What is Server side Scripting in PHP
6. How to create a webpage in HTML
7. How to Log into your Word Press site
8. What is E-Commerce Payment System

SECTION-B

Answer FIVE questions.

4X8=40M

UNIT I

9. Explain about E-business and E-Commerce
- (OR)
10. Explain the features and benefits of E-Commerce

UNIT II

11. Explain various Business Models of E-Commerce
- (OR)
12. Explain Architectural framework of E-Commerce

UNIT III

13. Explain E-Commerce Payment System
- (OR)
14. Explain Electronic Data Interchange

UNIT IV

15. Explain the basics of HTML


(OR)

16. Explain the basics of Client Side Scripting in JAVA SCRIPT
UNIT V

17. Explain Electronic Data Interchange

(OR)


18. How to create dashboard using wordpress

	Government College (Autonomous) Rajahmundry	Program & Semester			
Course Code CAP155	TITLE OF THE COURSE E- Commerce Application Development; Lab	III B.Com (CA). (V Sem)			
Teaching	Hours Allocated: 60 (Practical)	L	T	P	C
Pre-requisites:	E- Commerce	3	1	-	3

Syllabus:

Case study of e –commerce

1. Home page design of web site
2. Validation using PHP
3. Implement Catalogue design
4. Implement Access control mechanism(eg: username and password)
5. Case study on business model of online E-Commerce store

	Government College (Autonomous) Rajahmundry	Program & Semester			
Course Code CAP155	TITLE OF THE COURSE REAL TIME GOVERNANCE SYSTEM (RTGS)	IIIB.Com (CA). (V Sem)			
Teaching	Hours Allocated: 60 (Theory)	L	T	P	C
Pre-requisites:	E- Commerce	3	1	-	3

Course Objectives:

1. *Real-time Governance* (RTG) Centre helps the government monitor all the schemes, keep a vigilance on people and demand.
2. To Introduce E-Governance Infrastructure
3. To Understand the types of E-Governance
4. To Understand Human Infrastructural preparedness

Course Outcomes:

On Completion of the course, the students will be able to-	
CO1	Understand the terms regarding Governance, E-Governance and RTGS
CO2	Learn about E-Governance Infrastructure
CO3	Understand the E-Governance implementation in several countries
CO4	Understand the E-Governance implementation in several Indian states
CO5	Understand the applications of RTG

Course with focus on employability / entrepreneurship / Skill Development modules

Skill Development		Employability		Entrepreneurship	
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Syllabus:

UNIT I (12 Hours)

Introduction to E-Governance: Government, Governance and Good Governance, What is E-Governance or Electronic Governance? **E-Government and E-Governance:** A conceptual

Analysis, Objectives, Components, application domains, four phase model, implementing E-Governance, issues while implementing E-Governance, Opportunities and challenges. Types of E-Governance, What is Real-Time Governance (RTG), Real Time Governance Society (RTGS)

UNIT II (12 Hours)

E-Governance Infrastructure: Data Systems infrastructure, Executive Information Systems, Management Information Systems, Knowledge Management Systems, Transaction Processing Systems, **Legal Infrastructural preparedness:** IT Act 2000, Challenges to Indian law and cybercrime scenario in India, Amendments of the Indian IT Act **Institutional Infrastructural preparedness:** Internet, intranet, extranet **Human Infrastructural preparedness:** Top-level management, Middle-level management, Low-level management **Technological Infrastructural preparedness:** Information and communications technology, Data Warehousing, Cloud Computing

UNIT III (12 Hours)

E-Governance: Country Experience INDIA, US, UK, AUSTRALIA, DUBAI

UNIT IV (12 Hours)

E-Governance in India: Andhra Pradesh, Karnataka, Kerala, Uttar Pradesh, Madhya Pradesh
West Bengal, Gujarat

UNIT IV (12 Hours)

Latest Applications in Real Time Governance: Agriculture, Rural Development, Health care, Education, Tourism, Commerce and Trade

Textbooks:

1. E-Governance: concepts and case studies| CSR Prabhu| Prentice-Hall|
2. E-Governance| Niranjanpani, Sanhari Mishra | Himalaya Publishing House

Reference books:

1. E-Governance| Niranjanpani, Sanhari Mishra | Himalaya Publishing House

Web Links:

1. <http://www.egov4dev.org/success/case/>
2. <https://vikaspedia.in/e-governance/resources-for-vles>
3. <https://altametrics.com/en/information-systems/information-system-types.html>
4. <https://core.ap.gov.in/CMDashBoard/Index.aspx>

CO-PO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1													
CO2													
CO3													
CO4													
CO5													

Blue Print

S.No.	UNIT	Short 2 M	Essay 8 M	Weightage
1	I	2	2	20.8%
2	II	2	2	20.8%
3	III	2	2	20.8%
4	IV	1	2	18.75%
5	V	1	2	18.75%
		16	80	

GOVERNMENT COLLEGE (AUTONOMOUS), RAJAHMUNDRY

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DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS

I IIB.COM (Computer Applications)

Semester-V

REAL TIME GOVERNANCE SYSTEM (RTGS)

MODEL QUESTION PAPER (W.E.F 2022-2023)

Time: 2 ½ Hrs.

Max Marks: 50 M

SECTION-A

Answer any FIVE of the following questions.

5X2=10M

1. What is Good Governance
2. What is Real-Time Governance
3. What is Management Information System
4. Define IT Act 2000
5. Define Australia E-Governance
6. Define Dubai E-Governance
7. Define Gujarat E-Governance in India
8. Define Health care in Real Time Governance

SECTION-B

Answer FIVE questions.

4X8=40M

UNIT I

9. Explain the types of E-Governance

(OR)

10. Explain the components and four phase Model

UNIT II

11. Explain Institutional Infrastructure preparedness and Human Infrastructural preparedness

(OR)

12. Explain Technological Infrastructural preparedness

UNIT III

13. Explain the Experience of E-Governance in India

(OR)

14. Explain the Experience of E-Governance in US and UK

UNIT IV

15. Explain Andhra Pradesh E-Governance in India

(OR)


16. Explain Karnataka and Kerala Governance in India

UNIT V

17. Explain the Latest applications of Agriculture and Rural Development in Real time Governance

(OR)

18. Explain the Latest Applications of Education and Tourism in Real Time Governance

	Government College (Autonomous) Rajahmundry	Program & Semester			
Course Code CAP155	TITLE OF THE COURSE Real Time Governance System (RTGS) Lab	IIIB.Com (CA). (V Sem)			
Teaching	Hours Allocated: 60 (Practical)	L	T	P	C
Pre-requisites:				2	2

Course Objectives:

Syllabus:

Week 1: Write a Report on the role of Nationwide Networking in E-Governance

Week 2: Write a Report on SETU: A Citizen Facilitation Centre in India, regarding its successful or failure journey.


Week 3: Write a Report on National Cyber Security Policy, how it is useful to Indian citizens. **Week 4:** Write a Report on mee-seva/Village Secretariat/Ward secretariat, a new paradigm in citizen services.

Week 5: Write a Report on how Andhra Pradesh is implementing RTGS in Agriculture.

Week 6: Write a Report on how Andhra Pradesh is implementing RTGS in social welfare schemes

Week 7: Write a Report on how Andhra Pradesh is implementing RTGS in waste lands, agricultural lands and house properties.

Week 8: Write a Report on Electronic Birth Registration in any one state of our country.

	Government College (Autonomous) Rajahmundry	Program & Semester			
Course Code CAP155	TITLE OF THE COURSE MULTIMEDIA TOOLS AND APPLICATIONS	IIIB.Com (CA). (V Sem)			
Teaching	Hours Allocated: 60 (Theory)	L	T	P	C
Pre-requisites:		3	1	-	3

Course Objectives:

It introduces how multimedia can be used in various application areas. It provides a solid foundation to the students so that they can identify the proper applications of multimedia, evaluate the appropriate multimedia systems and develop effective multimedia applications.

Course Outcomes:

On Completion of the course, the students will be able to-	
CO1	Gain knowledge on the concepts related to Multimedia.
CO2	Understand the concepts like image data representation and colour modes.
CO3	Understand the different types of video signals and digital audio.
CO4	Know about multimedia data compression types and audio compression standards
CO5	Know about basic video compression techniques.

Course with focus on employability / entrepreneurship / Skill Development modules

Skill Development		Employability		Entrepreneurship	
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Syllabus:

UNIT I (12 Hours)

Introduction to multimedia: What is Multimedia?, Components of Multimedia System

Multimedia and Hypermedia, Multimedia Authoring metaphors, Multimedia Production,

Multimedia Presentation, Some Technical Design Issues, Automatic Authoring

UNIT II (12 Hours)

Image Data Representations and color models: Color science, Human vision, **Image data types: Black & white images:** 1-bit images (Binary image), 8-bit (Gray-level images) **Color images:** 24-bit color images, 8-bit color images, **Color models.**

UNIT III (12 Hours)

Fundamental concepts in video: Types of Video Signals, Analog Video, Digital Video
Basics of Digital Audio: What is Sound?, Digitization of Sound **Quantization and Transmission of Audio:** Pulse code modulation, Differential coding of audio, Predictive coding.

UNIT IV (12 Hours)

Multimedia Data Compression: Introduction, Basics of Information Theory, **Lossless Compression Algorithms:** Fix-Length Coding, Run-length coding, Dictionary-based coding
Variable Length Coding, Huffman Coding Algorithm **Audio Compression standards:** Introduction, Psychoacoustics model, MPEG Audio.

UNIT V (12 Hours)

Basic Video Compression Techniques: Introduction to Video compression, Video compression standard H.261, Video compression standard MPEG-1

Textbooks:

Fundamentals of Multimedia by Ze-Nian Li & Mark S. Drew. Publisher: Prentice Hall

Reference books:

1. An introduction to digital multimedia by Savage, T. M. and Vogel, K. E. 2008.
2. Digital Multimedia by Nigel Chapman & Jenny Chapman. 2009.

Web Links:

<https://ksuit342.wordpress.com/lectuers/>
<https://www.tutorialspoint.com/multimedia>

CO-PO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1													
CO2													
CO3													
CO4													
CO5													

Blue Print

S.No.	UNIT	Short 2 M	Essay 8 M	Weightage
1	I	2	2	20.8%
2	II	2	2	20.8%
3	III	2	2	20.8%
4	IV	1	2	18.75%
5	V	1	2	18.75%
		16	80	

GOVERNMENT COLLEGE (AUTONOMOUS), RAJAHMUNDRY

(Accredited by NAAC "A+" Grade)

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS

III B.COM (Computer Applications)

Semester-V

MULTIMEDIA TOOLS AND APPLICATIONS

MODEL QUESTION PAPER (W.E.F 2022-2023)

Time: 2 ½ Hrs.

Max Marks: 50 M

SECTION-A

Answer any FIVE of the following questions.

5X2=10M

1. What is Multimedia
2. Define technical design issues in Multimedia
3. Define 24-bit color images
4. Define 8-bit Gray-level images
5. What is Digitization of sound
6. Define Predictive coding
7. Define Huffman Coding algorithm
8. What is Video compression

SECTION-B

Answer questions.

4X8=40M

UNIT I

9. Explain the components of Multimedia System
- (OR)**
10. Explain Multimedia Production and Multimedia Presentation

UNIT II

11. Explain Black & White images in Multimedia
- (OR)**
12. Explain Color Models in Multimedia

UNIT III

13. Explain the types of Video signals
- (OR)**
14. Explain Quantization and Transmission of Audio

UNIT IV

15. Explain Dictionary-based coding in Multimedia Data Compression

(OR)


16. Explain Audio Compression standards in Multimedia Data Compression

UNIT V

17. Explain Video Compression standard H.261

(OR)


18. Explain Video Compression standard MPEG-1

	Government College (Autonomous) Rajahmundry	Program & Semester			
Course Code CAP155	TITLE OF THE COURSE Multimedia Tools and Applications; Lab	IIIB.Com (CA). (V Sem)			
Teaching	Hours Allocated: 30 (Practical)	L	T	P	C
Pre-requisites:				2	2

Course Objectives:

Syllabus:

1. Editing images using GIMP
2. Improve the Quality of your Image in GIMP
3. Create an impressive background in GIMP
4. Applying Shadow & Highlight effects in images
5. Black& white and color photo conversion.

	Government College (Autonomous) Rajahmundry	Program & Semester			
Course Code CAP155	TITLE OF THE COURSE DIGITAL IMAGING	IIIB.Com (CA). (V Sem)			
Teaching	Hours Allocated: 60 (Theory)	L	T	P	C
Pre-requisites:		3	1	-	3

Course Objectives:




The main objectives of the course are to:

- Introduce the digital image as a communication tool.
- Analyze the image, its context and meaning.
- Explore digital image manipulation through experimentation of various materials.
- Identify, examine and apply theoretical issues that are applied to image making.

Course Outcomes:

On Completion of the course, the students will be able to-	
CO1	Gain knowledge about Types of Graphics, Types of Objects and Types of video editingtools
CO2	Show their skills in editing and altering photographs for through abasic understanding of the tool box.
CO3	Gain knowledge in using the layers.
CO4	Gain knowledge in using the selection tools, repair tools.
CO5	Gain knowledge in using selection tools, applying filters and can show their skills.

Course with focus on employability / entrepreneurship / Skill Development modules

Skill Development		Employability		Entrepreneurship	
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Syllabus:

UNIT I (12 Hours)

Types of Graphics, Raster vs Vector Graphics, **Types of Objects**: Audio formats, Video formats, Image formats, Text document formats, **Types of video editing**, **Different color modes**. **Image Scanner**: Types of Image Scanners

UNIT II (12 Hours)

GIMP: What is GIMP?, GIMP tool box window, Layers Dialog, Tool Options Dialog, Image window, Image window menus

UNIT III (12 Hours)

Improving Digital Photos: Opening files, Rescaling saving files, Cropping, Brightening & Darkening, Rotating, and Sharpening. **Introduction to layers**: What is layer?, Using layer to add text, Using move tool, Changing colors, Simple effects on layers, Performing operations on layers, Using layers to copy and paste

UNIT IV (12 Hours)

Drawing: Drawing lines and curves, Changing colors and brushes, Erasing, Drawing rectangles, Circles and other shapes, Outlining and filling regions, filling with patterns and gradients

Selection: Working with selections, Select by color and fuzzy, Select Bezier paths, Modifying selections with selection modes

UNIT V (12 Hours)

Erasing and Touching Up: Dodge and burn tool, Clone tool, Sharpening using convolve toolss
Correcting Color Balance **Filters**: Filters, Blur, Enhance, Noise Filters.

Textbooks:

Textbook: Beginning GIMP from Novice to professional by Akkana
Peck, Second Edition, Apress

Reference books:

Web Links:**CO-PO Mapping:**

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1													
CO2													
CO3													
CO4													
CO5													

Blue Print

S.No.	UNIT	Short 2 M	Essay 8 M	Weightage
1	I	2	2	20.8%
2	II	2	2	20.8%
3	III	2	2	20.8%
4	IV	1	2	18.75%
5	V	1	2	18.75%
		16	80	

GOVERNMENT COLLEGE (AUTONOMOUS), RAJAHMUNDRY

(Accredited by NAAC "A+" Grade)

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS

III B.COM (Computer Applications)

Semester-V

DIGITAL IMAGING

MODEL QUESTION PAPER (W.E.F 2022-2023)

Time: 2 ½ Hrs.

Max Marks: 50 M

SECTION-A

Answer any FIVE of the following questions.

5X2=10M

1. What is Raster Scanner
2. Define Video editing
3. What is GIMP
4. What is Image Window
5. How to use Move Tool
6. Define Brightening and Darkening
7. How to modify selections with selection modes
8. How to correct color balance image.

SECTION-B

Answer FIVE questions.

4X8=40M

UNIT I

9. Explain different types of Graphics
- (OR)**
10. Explain different color modes in Graphics

UNIT II

11. Explain GIMP Tool box window
- (OR)**
12. Explain Image window menus and Tools options Dialog

UNIT III

13. Explain Cropping and Sharpening
- (OR)**
14. Explain Simple Effects and Performing Operations on Layers

UNIT IV

15. Explain working with selections

(OR)


16. Explain Drawing lines and curves

UNIT V

17. Explain Clone Tool and Burn Tool

(OR)

18. Explain filters

	Government College (Autonomous) Rajahmundry	Program & Semester			
Course Code CAP155	TITLE OF THE COURSE Course-7D: DIGITAL IMAGING; Lab	IIIB.Com (CA). (V Sem)			
Teaching	Hours Allocated: 30 (Practical)	L	T	P	C
Pre-requisites:		-	-	2	2

Syllabus:

1. Designing a Visiting card
2. Design Cover page of a book
3. Paper add for calling tenders
4. Design a Pamphlet
5. Brochure designing
6. Titles designing
7. Custom shapes creation
8. Image size modification
9. Background changes
10. Texture and patterns designing

**PROCEEDINGS OF THE PRINCIPAL
GOVERNMENT AUTONOMOUS COLLEGE, RAJAHMUNDRY**

PRESENT: Dr.R. David Kumar, M.Sc., M.Phil., Ph.D.

RC. NO. 152/GCRJY/ACAD. CELL//BOS/2021/, DATED. 05.07. 2022

Sub: GCRJY-Conduct of BoS Meetings for the Academic Year 2022-23 - Regarding

ORDER:

With reference to the subject cited, the lecturers-in-Charge of all the departments are hereby informed to conduct their respective Board of Studies (BoS) meetings by the end of July 2022.

You are also informed to intimate the date of your BoS meeting well in advance to the subject experts/University nominee/Industrial Nominee/members of BoS/Student nominee concerned to get their valuable views and suggestions in the deliberations to frame the concrete syllabi for your subjects keeping in view the objectives of the college and interest of the stake holders. The date should also be indicated to Academic Cell in advance.

You are further suggested to utilize the academic autonomy in incorporating the additional modules in the syllabi and identify the pedagogical strategies to implement the same.

Please note that your BoS document should contain the following contents in order

- a) Proceedings of the Principal pertaining to BoS
- b) Composition of BoS
- c) Table showing the Allocation of Credits in the following table for both theory and Lab in case of science subjects

S. No	Semester	Course Code	Title of the Course (Paper)	Max. Marks (SEE)	Marks in CIA	Hrs./week			
						L	T	P	C

L= Lecture, T= Tutorial, P= Practical, C= Credits

- d) Agenda wise Resolutions adopted in the meeting with detailed discussions
- e) Table showing Members present with signatures
- f) List of Examiners & Paper setters
- g) Syllabus for each course in the **Proforma given** (both theory & Practical in case of Science subjects) followed by model question papers (theory & practical)
- h) Unit wise Assignment questions at the end of syllabus of each course

You are requested to submit a separate document regarding addition/ deletion of specific topics from the syllabus in each course (paper) with justification, if any.

ACADEMIC CELL, GOVERNMENT COLLEGE
(AUTONOMOUS) RAJAHMUNDRY

All the *new Courses/certificate courses* proposed for the calendar year 2022, Seminars/workshops, field visits, study tours for 2022-23 should be placed before the respective Board and get them approved.

You are also requested to submit 2 hard copies & 2 soft copies (CDs) of BoS document to the Academic cell along with original bills and settle the bills after completion of the BoS meeting. You can approach the Academic Cell for necessary documents.

Most Important: You are requested to submit soft & hard copies of *Resolutions (including discussion)* separately to IQAC immediately after BoS meeting is completed.



PRINCIPAL ·

GOVERNMENT AUTONOMOUS COLLEGE
RAJAHMUNDRY

Copy to:

1. Lecturers-in-Charge of all the departments
2. File

GOVERNMENT COLLEGE RAJAHMUNDRY

(Estd: 1853, Affiliated to Adikavi Nannaya University)

An Autonomous Institution since 2000

Accredited by NAAC (RAF-2017) with “A+” Grade (CGPA: 3.38/4.00)

College with Potential for Excellence (2016-21)

NIRF 2021- Rank Band: 151-200



From

To

Dr.R. David Kumar. M.Sc., M.Phil., Ph.D
Principal,
Government College (Autonomous),
Rajahmundry.

Rc.No:1/GCRJY/Acad.Cell/BOS-2022-23 Dated: 15.07.2022

Sir/Madam,

Sub: Government College (Autonomous), Rajahmundry -- Board of studies meeting for the academic year 2022-23 - intimation and request to attend - Regarding.

Ref: Proceedings of the Vice-Chancellor No: ANUR/DAA/Govt.College (A), RJY/ BoS/ 2021, Dt. 08.09.2021

Greetings from 169 years old, NAAC “A+” Grade Government College (Autonomous), Rajahmundry.

I have the pleasure of intimating you that you have been nominated as a Member of Board of Studies in the Department of..... of our college by the Adikavi Nannaya University, Rajahmundry, vide Ref. Cited..

I further wish to inform you that the meeting of Board of Studies for the subject ofwill be held at the Department of..... atAM/PM on at Government College (Autonomous), Rajahmundry.

Hence, I request you to accept the nomination and attend the meeting on and share your valuable views and suggestions and participate actively in the deliberations of the meeting.

I herein provide the agenda of the meeting.

Agenda

1. Program wise Curriculum Design for all the Semesters
2. Designing of Course Outcomes and Course Objectives
3. Identification of unit wise assignment questions and relevant model question paper.
4. Identifying /inclusion of components of Skill Development, Employability and Entrepreneurship in the course content and specific activity proposed.
5. Additional inputs into the curriculum
6. Designing Model Question Papers and identifying potential paper setters
7. Innovative Teaching – Learning Methodology (Learner Centric)
8. Academic activities of the Department such as seminars, fieldworks etc.
9. Any other proposal with the permission of the chair

Thanking you, sir/Madam

Yours faithfully

Principal

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NIRF 2021- Rank Band: 151-200



From

To

Dr. R. David Kumar. M.Sc., M.Phil., Ph.D
Principal,
Government College (Autonomous),
Rajahmundry.

The Principal

Rc.No:2/GCRJY/Acad.Cell/BOS-2022-23 Dated: 15.07.2022

Sir/Madam,

Sub: Government College (Autonomous), Rajahmundry – Board of studies meeting for the academic year 2022-23 – Request to relieve- regarding.

Greetings from 168 years old, NAAC “A+” Grade Government College (Autonomous), Rajahmundry.

I have the pleasure of informing you that the Board of studies meeting of the Department of....., Government College (Autonomous), Rajahmundry is scheduled to be held onat..... AM/PM at Government College (Autonomous), Rajahmundry.

I further wish to inform you that Dr./Sri/Smt Professor/ Associate Professor/ Reader/ Lecturer of your institution has been nominated as University/ Local nominee/Industrial nominee.

Hence I request you to spare his/her services on the said date and relieve him to attend the same.

Thanking you, sir/Madam

Yours faithfully

Principal

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College with Potential for Excellence (2016-21)

NIRF 2021- Rank Band: 151-200



From

To

Dr. R. David Kumar. M.Sc., M.Phil., Ph.D
Principal,
Government College (Autonomous),
Rajahmundry.

Rc.No:3/GCRJY/Acad.Cell/BOS-2022-23 Dated: 08.07.2022

Sir/Madam,

Sub: Government College (Autonomous), Rajahmundry -Board of studies meeting for the academic year 2022-23 - request to attend and deliberate regarding

Greetings from 168 years old, NAAC “A+” Grade Government College (Autonomous), Rajahmundry.

I have the pleasure of informing you that the Board of studies meeting of the Department of, Government College (Autonomous), Rajahmundry is scheduled to be held on atAM/PM at Government College[A, Rajahmundry.

Hence, I request you to attend the meeting on....., as local Subject Expert/Industrial Expert and share your valuable views and suggestions and participate actively in the deliberations of the meeting.

Agenda

1. Program wise Curriculum Design for all the Semesters
2. Designing of Course Outcomes and Course Objectives
3. Identification of unit wise assignment questions and relevant model question paper.
4. Identifying /inclusion of components of Skill Development, Employability and Entrepreneurship in the course content and specific activity proposed.
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8. Academic activities of the Department such as seminars, fieldworks etc.
9. Any other proposal with the permission of the chair

Thanking you, sir/Madam

Yours faithfully

Principal