



**Government College for  
Women(A), Guntur.**

**COURSE  
INFORMATION  
BOOKLET**

**Cloud - Computing**

**2023-2024**

**DEPARTMENT OF  
COMPUTER  
SCIENCE**

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## **Vision and Mission of the Department**

### **Vision**

Empowering undergraduate computer science students to become globally competitive, ethically responsible and innovative problem solvers, fostering a dynamic and inclusive technological ecosystem.

### **Mission**

1. To foster interdisciplinary collaboration by encouraging computer science students to work on projects that integrates their knowledge with other fields, such as healthcare, agriculture, or environmental sciences, to address real-world challenges.
2. To enhance digital literacy and problem-solving skills among undergraduate computer science students by engaging them in the creation of educational technology tools and resources that can benefit students and teachers at all levels.
3. To promote open-source software development practices and ethical considerations by encouraging students to contribute to open-source projects and develop solutions that prioritizes data privacy, security, and responsible AI.
4. To foster entrepreneurship and innovation by challenging students to develop startups, Apps, or services that address societal needs and encourage an entrepreneurial mindset within the computer science curriculum.

### **Objectives for a B.Sc. Cloud Computing programme:**

- To get acquainted with the history of Computer Science and Cloud Computing to understand the conceptual underpinnings of the subject.
- To understand the importance of cloud services and virtualization.
- To formulate, build, develop and deploy cloud based apps.
- To generate solutions for real world cloud computing related problems by conducting experiments and applying related techniques.
- To establish a background for admission into professional Post-Graduate program.
- Understand how information technology affects society, business and the individual, both from a technical and from an ethical and legal point of view.

### Program Specific outcomes of B.Sc. Cloud Computing

PSO	After completion of the B.Sc. Cloud Computing programme, students will be able to
PSO 1	Demonstrate proficiency in understanding and working with the Cloud platforms
PSO 2	Understand and Apply the Customer relationship management (CRM) concepts in the business as per the global needs.
PSO 3	Demonstrate the competency to Build , develop, Customize and deploy cloud based apps.

## B.Sc Cloud Computing course structure (Three major system)

Sem	Paper	Title of the Course	Course Code	No. of hours per week	No. of Credits	CIA	SEE	Total Marks	Max Credits
FIRST YEAR									
I	I	Basics of Cloud Computing	CC317-1	4	3	30	70	100	5
		Cloud Computing Lab	CC317-1P	2	2	-	50	50	
II	II	Web application Development	CC317-2	4	3	30	70	100	5
		HTML / CSS Lab	CC317-2P	2	2	-	50	50	
First phase of Apprenticeship (During Summer Vacation) – Credits-4									4
SECOND YEAR									
III	III	Application development on Cloud Computing	CC317-3	4	3	30	70	100	5
		Cloud based Application Development Lab	CC317-3P	2	2	-	50	50	
IV	IV	APEX & Visual force Programming	CC317-4	4	3	30	70	100	10
		APEX and Visual force Lab	CC317-4P	2	2	-	50	50	
	V	Business Intelligence	CC317-5	4	3	30	70	100	
		Business Intelligence Lab	CC317-5P	2	2	-	50	50	
Second phase of Apprenticeship (During Summer Vacation)- Credits-4									4
THIRD YEAR									
V	VI A	SOAP INTEGRATION	CC317-6 A	3	3	30	70	100	10
		SOAP Lab	CC317-6A P	3	2	-	50	50	
	VII A	REST INTEGRATION	CC317-7A	3	3	30	70	100	
		REST APEX Lab	CC317-7AP	3	2	-	50	50	
		Or							
	VI B	AWS Compute Services	CC317-6B	3	3	30	70	100	
		AWS Compute Services Lab	CC317-6B P	3	2	-	50	50	
	VII B	AWS Storage Services	CC317-7B	3	3	30	70	100	
		AWS Storage Services Lab	CC317-7B P	3	2	-	50	50	
VI	Third Phase of Apprenticeship – Entire 5 <sup>th</sup> or Entire 6 <sup>th</sup> Semester according to APSCHE-Credits-12								12

Note-1: For Semester–V, for the domain subject Computer Science any one of the three pairs of SECs shall be chosen as courses VI and VII, i.e., VIA & VIIA or VIB & VIIB. The pair shall not be broken (A,Ballotment is random, not on any priority basis).

**B.Sc., Cloud Computing course structure: (Single major system)**

Sem	Pa per	Title of the Course	Course Code	No. of hours per week	No. of Credits	CIA	SEE	Total Marks	Max Credits
FIRST YEAR									
I	I	Essentials and applications of Mathematical, Physical and Chemical Sciences	1PS-CM-01	5	4	40	60	100	8
	II	Advances in Mathematical, Physical and Chemical Sciences	1PS-CM--02	5	4	40	60	100	
II	III	To be notified by APSCHE/University	2CC-03	5	4	40	60	100	8
	IV		2CC-04	5	4	40	60	100	
First phase of Apprenticeship (During Summer Vacation) – Credits-4 Community Service Project									4

**GOVT. COLLEGE FOR WOMEN(AUTONOMOUS), GUNTUR**  
**Department of Computer Science**  
**I B.Sc. Cloud Computing - I SEMESTER**  
**COURSE 1 : ESSENTIALS AND APPLICATIONS OF MATHEMATICAL, PHYSICAL AND CHEMICAL**  
**SCIENCES – Syllabus**

**Course Code: 1PS-CM-01**

**Credits: 4**

**Hours: 5hrs/Week (75 Hours)**

**Course Objectives:**

The objective of this course is to provide students with a comprehensive understanding of the essential concepts and applications of mathematical, physical, and chemical sciences. The course aims to develop students' critical thinking, problem-solving, and analytical skills in these areas, enabling them to apply scientific principles to real-world situations.

**Course outcomes:**

1. Apply critical thinking skills to solve complex problems involving complex numbers, trigonometric ratios, vectors, and statistical measures.
2. To Explain the basic principles and concepts underlying a broad range of fundamental areas of physics and to Connect their knowledge of physics to everyday situations
3. To Explain the basic principles and concepts underlying a broad range of fundamental areas of chemistry and to Connect their knowledge of chemistry to daily life.
4. Understand the interplay and connections between mathematics, physics, and chemistry in various applications. Recognize how mathematical models and physical and chemical
5. Principles can be used to explain and predict phenomena in different contexts.
6. To explore the history and evolution of the Internet and to gain an understanding of network security concepts, including threats, vulnerabilities, and countermeasures.

**UNIT V: ESSENTIALS OF COMPUTER SCIENCE:**

Milestones of computer evolution - Internet, history, Internet Service Providers, Types of Networks, IP, Domain Name Services, applications.

Ethical and social implications: Network and security concepts- Information Assurance Fundamentals, Cryptography-Symmetric and Asymmetric, Malware, Firewalls, Fraud Techniques- Privacy and Data Protection

**Recommended books:**

1. Functions of one complex variable by John.B.Conway, Springer- Verlag.
2. Elementary Trigonometry by H.S.Hall and S.R.Knight
3. Vector Algebra by A.R.Vasishta, Krishna Prakashan Media(P)Ltd. 4.Basic Statistics by B.L.Agarwal, New age international Publishers
4. University Physics with Modern Physics by Hugh D. Young and Roger A. Freedman
5. Fundamentals of Physics by David Halliday, Robert Resnick, and Jearl Walker
6. Physics for Scientists and Engineers with Modern Physics" by Raymond A. Serway and John W. Jewett Jr.
7. Physics for Technology and Engineering" by John Bird

8. Chemistry in daily life by Kirpal Singh
9. Chemistry of bio molecules by S. P. Bhutan
10. Fundamentals of Computers by V. Raja Raman
11. Cyber Security Essentials by James Graham, Richard Howard, Ryan Olson.



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**Department of Computer Science**

**I B.Sc. Cloud Computing - I SEMESTER**

**Course 2: ADVANCES IN MATHEMATICAL, PHYSICAL AND CHEMICAL SCIENCES – Syllabus**

**Course Code: 1PS-CM-02**

**Credits: 4**

**Hours: 5hrs/Week (75 Hours)**

**Course Objective:**

The objective of this course is to provide students with an in-depth understanding of the recent advances and cutting-edge research in mathematical, physical, and chemical sciences. The course aims to broaden students' knowledge beyond the foundational concepts and expose them to the latest developments in these disciplines, fostering critical thinking, research skills, and the ability to contribute to scientific advancements.

**Learning outcomes:**

Explore the applications of mathematics in various fields of physics and chemistry, to understand how mathematical concepts are used to model and solve real-world problems.

To Explain the basic principles and concepts underlying a broad range of fundamental areas of physics and to Connect their knowledge of physics to everyday situations.

Understand the different sources of renewable energy and their generation processes and advances in nanomaterials and their properties, with a focus on quantum dots. To study the emerging field of quantum communication and its potential applications. To gain an understanding of the principles of biophysics in studying biological systems. Explore the properties and applications of shape memory materials.

Understand the principles and techniques used in computer-aided drug design and drug delivery systems, to understand the fabrication techniques and working principles of nanosensors. Explore the effects of chemical pollutants on ecosystems and human health.

Understand the interplay and connections between mathematics, physics, and chemistry in various advanced applications. Recognize how mathematical models and physical and chemical principles can be used to explain and predict phenomena in different contexts.

Understand and convert between different number systems, such as binary, octal, decimal, and hexadecimal. Differentiate between analog and digital signals and understand their characteristics. Gain knowledge of different types of transmission media, such as wired (e.g., copper cables, fiber optics) and wireless (e.g., radio waves, microwave, satellite)..

## **UNIT V: Advanced Applications of computer Science**

Number System-Binary, Octal, decimal, and Hexadecimal, Signals-Analog, Digital, Modem, Codec, Multiplexing, Transmission media, error detection and correction- Parity check and CRC, Networking devices- Repeater, hub, bridge, switch, router, gateway.

Recommended books:

1. Coordinate Geometry by S.L.Lony, Arihant Publications
2. Calculus by Thomas and Finny, Pearson Publications
3. Matrices by A.R.Vasishtha and A.K.Vasishtha, Krishna PrakashanMedia(P)Ltd.
4. "Renewable Energy: Power for a Sustainable Future" by Godfrey Boyle
5. "Energy Storage: A Nontechnical Guide" by Richard Baxter
6. "Nanotechnology: Principles and Applications" by Sulabha K. Kulkarni and Raghvendra A. Bohara
7. "Biophysics: An Introduction" by Rodney Cotterill
8. "Medical Physics: Imaging" by James G. Webster
9. "Shape Memory Alloys: Properties and Applications" by Dimitris C. Lagoudas
10. Nano materials and applications by M.N.Borah
11. Environmental Chemistry by Anil.K.D.E.
12. Digital Logic Design by Morris Mano
13. Data Communication & Networking by BahrouzForouzan.