

B.Sc. (Data Science)

1. DEPARTMENT VISION

- The Department of B.Sc. (Data Science) aims to equip students with industry-relevant skills in data science, AI, and automation, fostering global competence.
- It aims for recognition through innovation, excellence in education, and collaborative research.
- The focus is on preparing graduates who are ready to contribute to societal needs and sustainable solutions.
- The department aims to achieve excellence in data science education, research, and entrepreneurship, serving both industry and society.

2. DEPARTMENT MISSION

- Develop a state-of-the-art infrastructure to foster an industry-conducive environment for data-driven solutions.
- Empower students with innovative cognitive solutions through data analytics skills and advancements in high-performance computing.
- Foster entrepreneurial qualities and leadership in students, encouraging them to meet industry and community needs with ethical standards.
- Encourage interdisciplinary research and collaboration with industry to solve complex, real-world problems.

3. PROGRAMME OUTCOMES – B.Sc. Computer Science program outcome to be used as it is in same Program

4. PROGRAM SPECIFIC OUTCOMES (PSO)

- Apply Data Science principles, including visualization, management, and security, to build intelligent predictive models for solving real-world problems.
- Apply AI and Data Science skills in diverse fields like Healthcare, Education, Agriculture, Intelligent Transport, Environment, and Smart Systems to solve real-world problems.

- Use analytic technologies to derive actionable foresight, insights, and hindsight from data for solving business and engineering challenges.
- Leverage AI and Data Science techniques to predict future events in sectors like Healthcare, Education, Agriculture, Manufacturing, Automation, Robotics, and Transport.
- Enhance critical thinking in emerging technologies such as Hybrid Mobile apps, cloud technology, and cyber-physical systems, applying mathematical models to research and solution development.
- Use Business Analytics, Visualization, and Statistical Tools, gained through certifications, projects, internships, and lab exercises, to address critical issues.
- Foster continuous learning and independent development to qualify for careers in AI and Data Science, adapting to the evolving technological landscape.

5. COURSE STRUCTURE

B.Sc. COMPUTER SCIENCE WITH DATA SCIENCE COURSE STRUCTURE

YEAR – I SEMESTER – I

Part	Sub. Code	List of Courses	Credit	Hrs	Int.	Ext.	Total
Part-I	----	Language Paper-I	3	6	25	75	100
Part-II	100L1Z	English Paper-I	3	6	25	75	100
Part-III	127C1A	CC- I: Python Programming	5	4	25	75	100
	127C11	CC- II: Python Programming Practical	5	5	40	60	100
	127E1A 127E1B 127E1C	EC-I Generic / Discipline Specific Mathematics-I Statistics-I Financial Accounting-I	3	5	25	75	100

Part-IV	127S1A	SEC- I: Office Automation	2	2	25	75	100
	100S1A	Basic Tamil-I (Other Language Students)					
	100S1B	Advanced Tamil-I					
	127B1A	FC: Fundamentals of Computers	2	2	25	75	100

YEAR – I SEMESTER – II

Part	Sub. Code	List of Courses	Credit	Hrs	Int.	Ext.	Total
Part-I	----	Language Paper-II	3	6	25	75	100
Part-II	100L2Z	English Paper-II	3	6	25	75	100
Part-III	127C2A	CC- III: Java Programming	5	4	25	75	100
	127C21	CC- IV: Java Programming Practical	5	5	40	60	100
	127E2A	EC - II Generic / Discipline Specific : Mathematics II	3	5	25	75	100
	127E2B	Statistics II					
127E2C	Financial Accounting-II						
Part-IV	127S21	SEC-II: Office Automation Practical	2	2	40	60	100
	100S2A	Basic Tamil-II (Other Language Students)			25	75	100
	100S2B	Advanced Tamil- II			25	75	100
	127S2A	SEC- III: Quantitative Aptitude			25	75	100

YEAR – II SEMESTER – III

Part	Sub. Code	List of Courses	Credit	Hrs	Int.	Ext.	Total
Part-I	----	Language Paper-III	3	6	25	75	100
Part-II	200L3Z	English Paper-III	3	6	25	75	100
Part-III	227C3A	CC- V: Data Structures	5	4	25	75	100
	227C31	CC- VI: Data Structures Practical	5	5	40	60	100
	227E3A 227E3B 227E3C	EC - III Generic / Discipline Specific: Mathematics I Statistics I Resource Management Techniques-I	3	5	25	75	100
Part-IV	227S31	SEC- IV: (Entrepreneurial Based): Web Page Design Practical	1	1	40	60	100
	227S32	SEC- V: Desktop Publishing Practical	2	2	40	60	100
	----	Environmental Science	--	1	--	--	--

YEAR – II SEMESTER – IV

Part	Sub. Code	List of Courses	Credit	Hrs	Int.	Ext.	Total
Part-I	----	Language Paper-IV	3	6	25	75	100
Part-II	200L4Z	English Paper-IV	3	6	25	75	100
Part-III	227C4A	CC- VII: Data Science Essentials &	5	4	25	75	100
	227C41	CC-VIII: Data Science using Python Practical &	5	4	40	60	100
	227E4A 227E4B 227E4C	EC-IV Generic / Discipline Specific Mathematics II Statistics II Resource Management Techniques-II	3	5	25	75	100
Part-IV	227S4A	SEC-VI: Emotional Intelligence	2	2	25	75	100
	227S4B	SEC-VII: Technical Writing	2	2	25	75	100
	---	Environmental Science	2	1	25	75	100

YEAR – III SEMESTER – V

Part	Sub. Code	List of Courses	Credit	Hrs	Int.	Ext.	Total
Part- III	327C5A	CC- IX: Data Visualization &	4	5	25	75	100
	327C51	CC- X: Data Visualization Practical &	4	5	40	60	100
	327C5B	CC- XI: R Programming	4	5	25	75	100
	327C52	CC- XII: R Programming Practical	4	5	40	60	100
	327E5A 327E5B 327E5C	EC -V: Computer Networks Software Engineering Computing System Fundamentals	3	4	25	75	100
	327E5D 327E5E 327E5F	EC -VI: Cloud Computing Big Data Analytics Data Mining and Warehousing	3	4	25	75	100
Part-IV	---	Value Education	2	2	25	75	100
	---	Internship / Industrial Training (During summer vacation at the end of IV semester)	2	--	--	--	--

YEAR – III SEMESTER – VI

Part	Sub. Code	List of Courses	Credit	Hrs	Int.	Ext.	Total
Part- III	327C6A	CC - XIII: Data Analytics &	4	6	25	75	100
	327C61	CC - XIV: Data Analytics Practical &	4	6	40	60	100
	327C6B	CC - XV: Natural Language Processing	4	6	25	75	100
	327E6A 327E6B 327E6C	EC -VII: Mobile Ad-hoc Network Artificial Neural Networks Grid Computing	3	5	25	75	100
	327E6D 327E6E 327E6F	EC-VIII: Internet of Things and its Applications Robotics and Its Applications Information Security	3	5	25	75	100
	Part-IV	327S61	Professional Competency Skill Course: Mini Project	2	2	40	60
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