RV College of Engineering®
Mysore Road, RV Vidyaniketan Post,
Bengaluru - 560059, Karnataka, India

NBA Accredited (UG - 6Years)

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Department of Computer Science and Engineering

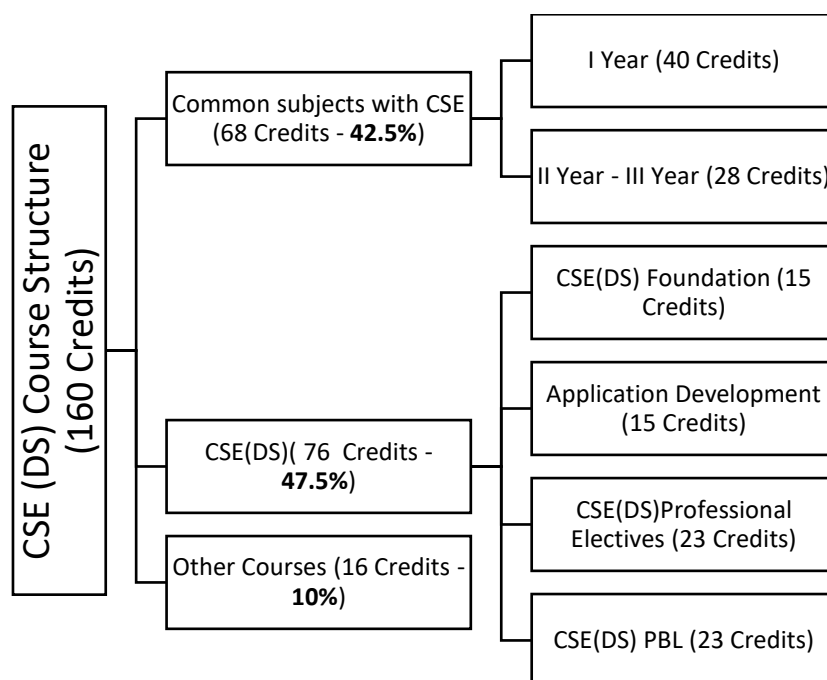# Programme: B.E. In Computer Science & Engineering (Data Science)

Data Science is the combination of Computer Science and Statistics which evolved as early as 1962 when John W. Tukey predicted the use of computers to revolutionize data analysis as an empirical science. It took nearly two decades for the computers in making efficient use of "big data". Throughout 2000s, data science gained adhesion as a vital emerging discipline.

Data science platform is the combination of statistical, mathematical, and programming techniques that use Machine Learning (ML) algorithms and advanced analytics to uncover insights from data and automate data processing activities, such as data discovery, data cleansing, data preparation, data analysis, and data visualization. It helps organizations in making data-driven decisions to enhance operational efficiency and improve customer experience.

The major focus of Computer Science & Engineering (Data Science) Programme is to equip students with statistical, mathematical reasoning, machine learning, knowledge discovery, and visualization skills. At the end of the course the students will gain cross disciplinary skills across fields such as statistics, computer science, machine learning and will have career opportunities in healthcare, business, ecommerce, social networking companies, climatology, biotechnology, genetics, and other important areas.

Vision of CSE(Data Science) Program at RVCE.

To emerge as a leader in the area of CSE(DS) through quality engineering education with future of skills and innovation to counterpart the ever growing needs of the society for sustainability.

CSE (DS) Course Structure (160 Credits)

- Common subjects with CSE (68 Credits - **42.5%**)
  - I Year (40 Credits)
  - II Year - III Year (28 Credits)
- CSE(DS)(76 Credits - **47.5%**)
  - CSE(DS) Foundation (15 Credits)
  - Application Development (15 Credits)
  - CSE(DS)Professional Electives (23 Credits)
  - CSE(DS) PBL (23 Credits)
- Other Courses (16 Credits - **10%**)

Sl.No.	Item	Description	Credits allocation
1	**First Year**	Common Syllabus - Computer Science Stream	40
2	**Common with Computer Science and Engineering (II & III Year)**	• Linear Algebra, Probability Theory and Statistics • Data Structures and its Applications • Applied Digital Logic Design and Computer Organisation • Operating Systems • Discrete Mathematical Structures and Combinatorics • Design and Analysis of Algorithms • Computer Networks • Theory of Computation • Software Engineering & Project Management	28
3	**Foundation Courses CSE(DS Science)**	• Artificial Intelligence & Machine Learning • Scalable Computing • Information & Network Security • Big Data Analytics	15
4	**CSE(DS) Application Development courses**	• Database Management Systems • IoT and Embedded Computing • Data Visualization • Statistical Machine Learning for Data Science	15
6	**Professional Elective Streams**	**Intelligent Computing**: • Computer Vision • Natural Language Processing • IOT Analytics **Data Engineering:** • Distributed File Systems • Data Warehousing • NoSQL Databases • Data Engineering & MLOps • Blockchain Technology • Exploratory Data Analysis • Time Series Analysis **Learning Models :** • Neural Networks Architectures for Data Analysis • Introduction to toolkits for Machine Learning • Deep Learning **Business Intelligence**: • Web Technologies for Advanced Data Visualization • Cloud Computing technologies for big data and Analytics • Business Analytics **Interdisciplinary Stream:** • Data and Application Security • Data & Internet Security • Robotics • AR and VR, etc.	23

		NPTEL-MOOC courses: Interdisciplinary and Mathematics	
7	**Project-based learning**	• Design thinking • Mini and Major Projects • Internships	23
8	**Other Courses**	• Humanity and Social Sciences • Ability Enhancement Courses and Liberal Arts • Universal Human Values • Communicative English and Kannada • Environmental Technology and Bioinspired Engineering	16

Coordinator   **Head of the Department**

Dr.Shobha G   **Dr.Ramakanthkumar P**