



# SNS COLLEGE OF TECHNOLOGY

Coimbatore – 641 035



## Department of Computer Science and Engineering

### 19CSE403-Green Cloud computing

#### GREEN COMPUTING

Green computing, also known as sustainable or eco-friendly computing, is the practice of designing, manufacturing, using, and disposing of computers, servers, and other IT equipment in a way that reduces their environmental impact and promotes sustainability. Green computing encompasses various strategies and technologies aimed at conserving energy, reducing electronic waste, and minimizing the carbon footprint of information technology. Here are some key aspects of green computing:

##### 1. **Energy Efficiency:**

- Energy-efficient hardware and software design are central to green computing. This includes low-power processors, efficient power supplies, and the use of energy-saving sleep modes.

##### 2. **Virtualization and Consolidation:**

- Virtualization technologies allow multiple virtual machines to run on a single physical server, increasing resource utilization and reducing the number of physical servers required.

##### 3. **Data Center Efficiency:**

- Data centers are a significant energy consumer. Practices like hot/cold aisle containment, efficient cooling systems, and server consolidation are used to reduce energy usage in data centers.

##### 4. **Renewable Energy:**

- Powering data centers and IT equipment with renewable energy sources like solar, wind, and hydroelectric power helps reduce reliance on fossil fuels.

##### 5. **E-Waste Reduction:**

- Efforts are made to extend the lifespan of electronic equipment and promote recycling. This includes proper disposal of old hardware and refurbishing or reselling equipment whenever possible.

##### 6. **Energy-Efficient Software:**

- Software optimization can reduce energy consumption, such as using efficient algorithms and coding practices.

##### 7. **Remote and Cloud Computing:**

- Cloud services often lead to better resource utilization compared to traditional computing, as resources are allocated dynamically based on demand.

#### 8. Telecommuting and Remote Work:

- Promoting remote work reduces the need for commuting to physical office locations, saving energy and reducing carbon emissions.

#### 9. Regulatory Compliance:

- Complying with environmental regulations and industry standards related to energy efficiency and electronic waste management is essential for green computing.

#### 10. Sustainability Initiatives:

- Many organizations incorporate green computing into their corporate social responsibility (CSR) initiatives and sustainability goals.

#### 11. Lifecycle Assessment:

- Analyzing the entire lifecycle of IT equipment, from manufacturing to disposal, helps identify areas for improvement and environmental impact reduction.

#### 12. Behavioral Change:

- Training and awareness programs can encourage users to adopt energy-saving practices and reduce unnecessary resource consumption.

Green computing is not only environmentally responsible but also financially advantageous. It can lead to cost savings through reduced energy consumption and extended equipment lifespans. Moreover, it aligns with the broader global efforts to address climate change and reduce the carbon footprint of the IT industry.

