

COURSE CONTENT:

BIG DATA ANALYTICS AND ARTIFICIAL INTELLIGENCE IN PUBLIC ADMINISTRATION (08th to 19th June 2026)

1. Introduction to Big Data in Government

- Concept and characteristics of Big Data (9V)
- Role of Big Data in public administration and governance
- Data sources in Government (administrative data, Government data repository, open data sources)

2. Data Management and Pre-processing

- Data collection, cleaning, and transformation
- Handling structured and unstructured data
- Data quality and governance frameworks

3. Big Data Analytics Techniques

- Descriptive, diagnostic, predictive, and prescriptive analytics
- Introduction to machine learning for public sector applications
- Use cases in taxation, healthcare, social welfare, urban planning, Environment and cyber-crimes.

4. Tools for Data Analytics: Hands-on exposure to tools such as:

- MS Excel (advanced analytics)
- Tableau / Power BI for visualization
- Python / R (basic introduction)

5. Data Visualization and Dash-boards

- Principles of effective data visualization
- Designing interactive dashboards for policy-makers
- Communicating insights through charts, graphs, and reports

6. Applications in Government Decision-Making

- Budgeting and Expenditure tracking through Public Finance (PFMS)
- Monitoring public schemes and outcomes
- Fraud detection and audit analytics through AI
- Smart governance and digital public infrastructure

7. Ethics, Privacy, and Data Security

- Data privacy and protection in Government systems
- Ethical use of data and AI
- Cybersecurity considerations in data handling

8. Case Studies and Practical Sessions

- Real-world case studies from India and global practices
- Group exercises and project work
- Development of dashboards for government use-cases