| **Session Plan (Tools for Data Science - Modules 1, 2, and 3) - (Online)** | | | | |
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| **Topics** | **Objectives** | **Methodology**  **& ROPES model** | **Description** | **Duration** |

| **Introduction & Recap** | Recap the previous sessions and introduce today’s objectives | PPT Recap and Introduction | Instructor recaps the key points from the previous sessions and sets the context for exploring data science tools. | 10 mins |
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| **Overview of Data Science Tools** | Learn about key tools for managing, visualizing, and deploying data | PPT Presentation Module1−Slides3−6 | Instructor explains various categories of data science tools, from data management to model deployment and monitoring. | 15 mins |
| **Open-Source Tools** | Explore open-source tools for data science | PPT Presentation Module1−Slides8−11 | The instructor covers open-source tools like MySQL, PostgreSQL, MongoDB, and visualization tools like Apache Superset. | 15 mins |
| **Cloud-Based Tools** | Learn about cloud-based data science tools | PPT Presentation Module1−Slides15−17 | Instructor explains cloud-based tools like Watson Studio, AWS DynamoDB, and IBM Db2, focusing on scalability and collaboration. | 15 mins |
| **Jupyter Notebooks** | Understand how to use Jupyter Notebooks for interactive data science | PPT Presentation Module3−Slides4−9 | The instructor demonstrates how to create, run, and manage Jupyter Notebooks, emphasizing interactive data exploration. | 20 mins |
| **Activity** | Group activity: Exploring Jupyter Notebooks | Hands-on activity | Learners create a simple Jupyter Notebook, run code cells, and share outputs in small groups. | 15 mins |
| **Break** |  |  |  | 20 mins |
| **RStudio & GitHub** | Learn about RStudio and GitHub for version control | PPT Presentation Module3−Slides10−15 | Instructor explains RStudio for data analysis and GitHub for code collaboration, focusing on version control and project management. | 20 mins |
| **APIs, Datasets, and Models** | Explore APIs, datasets, and machine learning models | PPT Presentation Module2−Slides6−18 | The instructor covers APIs, different types of datasets (e.g., open data), and introduces machine learning models and libraries. | 20 mins |
| **Machine Learning Models** | Learn the types of machine learning models and how they work | PPT Presentation Module2−Slides16−18 | Instructor explains supervised, unsupervised, and reinforcement learning models, including tools like TensorFlow and PyTorch. | 15 mins |
| **Activity** | Q&A to reinforce learning | Interactive Q&A Module2−Slide19 | Instructor engages participants by asking questions about the content to assess knowledge. | 15 mins |
| **Closure** | Wrap up the session and summarize key takeaways | Activity | Instructor summarizes key concepts using interactive tools. | 10 mins |