Course Title	**Data Science**
Course Code	**EI-334**
Credit Hours	3
Category	Technical Elective
Prerequisite	DI-326: Artificial Intelligence
Co-Requisite	None
Follow Up	None
Course Description	**Python Programming:** Environment, python programming techniques such as lambdas, reading and manipulating csv files, and the numpy library. **Data Manipulation and Cleaning:** Python Pandas data science library, abstraction of the Series and DataFrame as the central data structures for data analysis, functions such as groupby, merge, and pivot tables. **Inferential Statistical Analyses**. Machine learning vs Descriptive Statistics, scikit learn toolkit, data dimensionality, clustering, evaluating clusters. **Supervised Learning:** predictive modelling, data generalizability, cross validation, Overfitting.
Text Book(s)	1. Joel Grus, Data Science from Scratch: First Principles with Python, 1st Edition, O'Reilly, 2015, ISBN: 1-491-90142-X.
Reference Material	1. https://www.coursera.org/specializations/data-science-python 2. https://www.coursera.org/learn/python-data-analysis/home/info 3. https://www.coursera.org/degrees/master-of-computer-science-asu 4. https://www.coursera.org/degrees/master-of-applied-data-science-umich 5. https://www.coursera.org/degrees/masters-in-computer-data-science