

# DATA ANALYTICS

COMPETENCY-BASED EDUCATION,  
CONSULTING and RESEARCH

Data Analytics takes Business Knowledge, IT Knowledge, and Analytic Knowledge all working together to gain insight and drive innovation.

## DATA ANALYTICS

- Interdisciplinary field about methods, processes, and systems to extract knowledge or insights from data

## BUSINESS KNOWLEDGE

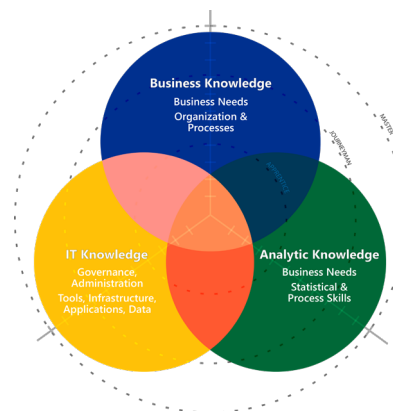
- Understanding business needs
- Ability to help business managers set and balance priorities by analyzing consequences of choices and creating business cases

## IT KNOWLEDGE

- Ability to understand the business intelligence infrastructure implications of business and analytic requirements
- Deep understanding of how to access and manage data required to support business and analysis requirements

## ANALYTICS KNOWLEDGE

- Fluency with key analytic applications
- Researching business problems and creating models that help analyze these problems



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AIR FORCE INSTITUTE OF TECHNOLOGY  
**SCHOOL OF SYSTEMS AND LOGISTICS**



<https://www.afit.edu/ls/>

# DATA PROFESSIONAL CONTINUING EDUCATION (COURSE/WORKSHOP NUMBERS)

## FOUNDATIONS

## BEGINNER

## INTERMEDIATE

## ADVANCED

## STRATEGIC

NON-TECHNICAL

✓ **DAS 101-105**  
**Knowledge & Tool Fndmntls**  
 • Introduction to Data Analysis  
 • Foundations of Data Manip.  
 • Cleaning Data with MS Excel  
 • Manipulating Data MS Excel  
 • Foundations of Data Visual

### Citizen Data Analyst (Non-Technical Action Officers)

✓ **DAS 201**  
**Fundamentals of DA**  
 • Data Manipulation  
 • Descriptive, Diagnostic and Predictive Analysis  
 • Fundamentals Regression Analysis

✓ **Tools & Techniques**  
**WKDAS 301**  
 • Concepts of DA Tools & Techinques  
 ✓ **WKDAS 672**  
 • DA Tools & Techniques

⚙ **WKDAS 401**  
**Advanced Topics in DA**  
 • Causal Loops  
 • Markov Chains  
 • DOE  
 • SPC

✓ **DAS 460**  
**Enhancing a DA Culture**  
 • What is Data Analytics  
 • Statistics Refresher  
 • Industry Case Analysis  
 • Data Analytics Framework  
 ⚙ **Not Assgnd**  
 • Executive (GO/SES) Course  
 • Asking the right questions

TECHNICAL

⚙ **DAS 109**  
**Intro to Structured Query Language (SQL)**

✓ **WKDAS 175**  
**MS Power BI Fundamentals**

✓ **WKDRS 110**  
**Introduction to Data Research**  
 • Organizational Reqs  
 • Gap Analysis  
 • Planning, Scheduling, Executing Data Project  
 • Research Methods

✓ **WKDES 130**  
**Fundamentals of Data Arch.**  
 • Data Management, Governance, and Architecture

✓ **R/RStudio**  
 ✓ **WKDRS 101 Introduction**  
 ✓ **WKDRS 102 DA Essentials**

✓ **Python**  
 ✓ **DSS 101 Found. of Prog. I**  
 ✓ **DSS 102 Found. of Prog. II**

### Professional Data Analyst (Technical Action Officers)

⚙ **WKDRS 210**  
**Fundamentals of DA in R**  
 • Prepare Data for Analysis  
 • Basic Statistical Summaries  
 • Visualizations

⚙ **WKDRS 310**  
**Advanced Stats Methods and Programming**  
 • Menu Based Statistical Software Programming  
 • Develop Insights  
 • Sensitivity Analysis

⚙ **WKDRS 410**  
**Statistical Learning in R**  
 • Exploratory and Inferential Statistics  
 • Simulation  
 • Predictive Modeling

⚙ **Not Assgnd**  
 • Strategic Alignment and Deployment  
 • Developing Data Culture  
 • Enabling Data Driven Change

### Data Scientist (Data Professionals)

✓ **WKDSS 220**  
**Fundamentals of Data Science with Python**  
 • Data Science Workflow  
 • Data Cleaning  
 • Estimation & Classification  
 • Data Visualization Basics

✓ **WKDSS 320**  
**Intermediate Data Science with Python**  
 • Unsupervised Learning  
 • Neural Networks  
 • RNNs and CNNs  
 • Dimen. Reduct. & Expan.

✓ **WKDSS 420**  
**Advanced Data Science Topics with Python**  
 • Bias in AI and Ethics  
 • Nat. Language Processing  
 • Recommender Systems  
 • Unstructured Data

### Data Architect/Engineer (IT Professionals)

✓ **WKDES 230**  
**Relational Databases**  
 • Curation of Large Data  
 • Data Lifecycle Management

✓ **WKDES 330**  
**Database Management**  
 • Transactional Data  
 • Extraction  
 • Automated Data Cleaning, Storage and Preparation

⚙ **WKDES 430**  
**Working with Big Data**  
 • Database Systems Architecture and Implementation  
 • Big Data Techniques and Technologies

✓ = Course Complete  
 ⚙ = Course in Development



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