GENERAL SERVICES ADMINISTRATION

Federal Supply Service
Authorized Federal Supply Schedule Price List

On-line access to contract ordering information, terms and conditions, up-to-date pricing, and the option to create an electronic delivery order is available through GSA Advantage!™, a menu-driven database system. The INTERNET address for GSA Advantage!™ is: http://www.GSAAdvantage.gov.

Contract Number: 47QTCA19D009Y
Contract Period: 04/15/2019 – 04/14/2024

For more information on ordering from Federal Supply Schedules go to the GSA Schedules page at GSA.gov.

Contractor: DSQUORUM, LLC d.b.a. Data Society
1717 E. Cary St.
Richmond, VA 23223-6935

Schedule Title: Multiple Award Schedule
Federal Supply Group: Information Technology

Business Size: Woman-Owned Small Business (WOSB)

Telephone: 202-599-0822
Web Site: http://www.datasociety.com
E-mail: legal@datasociety.com
Contract Administration: John F Nader

Price Current through Mod #PS-008 dated 05-26-2022.
CUSTOMER INFORMATION:

1a. Table of Awarded Special Item Number(s) with appropriate cross-reference to page numbers:

<table>
<thead>
<tr>
<th>SIN</th>
<th>SIN Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>54151S &amp; 54151SRC</td>
<td>Information Technology Professional Services</td>
</tr>
<tr>
<td>611420 &amp; 611420RC</td>
<td>Information Technology Training</td>
</tr>
<tr>
<td>OLM &amp; OLMRC</td>
<td>Order Level Materials</td>
</tr>
</tbody>
</table>

1b. Identification of the lowest priced model number and lowest unit price for that model for each special item number awarded in the contract. See Pricing Page 7.

1c. If the Contractor is proposing hourly rates a description of all corresponding commercial job titles, experience, functional responsibility and education for those types of employees or subcontractors who will perform services shall be provided. If hourly rates are not applicable, indicate “Not applicable” for this item. See Labor Category Descriptions Page 9.

2. Maximum Order: For SIN 54151S - $500,000.00
   For SINs 611420 and OLM - $250,000.00

3. Minimum Order: $100.00

4. Geographic Coverage (delivery Area): Worldwide

5. Point(s) of production (city, county, and state or foreign country): N/A

6. Discount from list prices or statement of net price: Government net prices (discounts already deducted).

7. Quantity discounts: None

8. Prompt payment terms: Net 30 days
   Information for Ordering Offices: Prompt payment terms cannot be negotiated out of the contractual agreement in exchange for other concessions

9. Foreign items (list items by country of origin): None

10a. Time of Delivery (Contractor insert number of days): DSQUORUM, LLC d.b.a. Data Society shall deliver or perform services in accordance with the terms negotiated in an agency’s order.

10b. Expedited Delivery. The Contractor will insert the sentence “Items available for expedited delivery are noted in this price list.” under this heading. The Contractor may use a symbol of its choosing to highlight items in its price list that have expedited delivery: Consult with Contractor

10c. Overnight and 2-day delivery. The Contractor will indicate whether overnight and 2-day delivery are available. Also, the Contractor will indicate that the schedule customer may contact the Contractor for rates for overnight and 2-day delivery: Consult with Contractor
10d. Urgent Requirements. The Contractor will note in its price list the “Urgent Requirements” clause of its contract and advise agencies that they can also contact the Contractor’s representative to effect a faster delivery: Consult with Contractor

11. F.O.B Points(s): Destination

12a. Ordering Address(es): Data Society
      ATTN: Legal Department
      1717 E. Cary St.
      Richmond, VA 23223-6935
      (P) 202-599-0822 (E) legal@datasociety.com

12b. Ordering procedures: For supplies and services, the ordering procedures, information on Blanket Purchase Agreements (BPAs) are found in Federal Acquisition Regulation (FAR) 8.405-3.

13. Payment address(es): Data Society
      ATTN: Accounts Receivable
      1717 E. Cary St.
      Richmond, VA 23223-6935
      (P) 202-599-0822 (E) legal@datasociety.com

14. Warranty provision: Contractor’s Standard Warranty

15. Export Packing Charges (if applicable): N/A

16. Terms and conditions of rental, maintenance, and repair (if applicable): N/A

17. Terms and conditions of installation (if applicable): N/A

18a. Terms and conditions of repair parts indicating date of parts price lists and any discounts from list prices (if applicable): N/A

18b. Terms and conditions for any other services (if applicable): N/A

19. List of service and distribution points (if applicable): N/A

20. List of participating dealers (if applicable): N/A

21. Preventive maintenance (if applicable): N/A

22a. Environmental attributes, e.g., recycled content, energy efficiency, and/or reduced pollutants: N/A

22b. If applicable, indicate that Section 508 compliance information is available on Electronic and Information Technology (EIT) supplies and services and show where full details can be found (e.g. contractor’s website or other location.) The EIT standards can be found at: www.Section508.gov/. http://www.datasociety.com
23. **Unique Entity Identifier (UEI) Number:** F5DJH5SUJAN3

24. **Notification regarding registration in System for Award Management (SAM) database:**
DSQUORUM, LLC d.b.a. Data Society is registered in the System for Award Management.
Our Mission

We provide customized, industry-tailored data science training and AI solutions — partnering with organizations to educate, equip, and empower their workforce with the skills to achieve their goals and expand their impact.

About Data Society

Data Society is a Washington, D.C.-based, certified woman-owned small business (WOSB) that provides high-impact custom data science, artificial intelligence/machine learning (AI/ML) and natural language processing software development and other technology solutions, as well as customized training programs to executives, analysts, scientists, and engineers. Since 2014, Data Society has demonstrated success in solving our customers’ most vexing challenges in agencies such as the U.S. Air Force and Army, U.S. Department of State, Administrative Offices of the U.S. Courts, U.S. Department of Health and Human Services, NASA and the FDIC, as well as private sector companies such as Comcast, Northrop Grumman, IQVIA and Noblis, multi-national organizations such as the Inter-American Development Bank and International Monetary Fund, and universities such as the University of California at Riverside and the University of Oregon.

Training is in our DNA. Our custom training is designed with each client to meet the range of learners from beginner to expert and includes a full variety of programming, design, data literacy, data analysis, data visualization, data science, machine learning, and artificial intelligence topics. Data Society has received numerous awards, including the 2016 FedScoop Tech Program of the Year award for building the Commerce Data Academy for the Department of Commerce. Data Society has also been listed as one of the Top 10 EdTech companies to watch in 2017 for its innovative approaches to teaching data science to professionals without a background in math or programming. In 2021, we debuted at 1,834 on the Inc. 5000 Fastest-Growing Private Companies in America list and also won the 2021 FDITech competition, sponsored by the FDIC, for the most creative solution.

Our in-house team of expert consultants, data scientists, software engineers, and UX designers help government and commercial clients tackle the most formidable data architecture, data management, data visualization/dashboarding and AI/ML projects. Our repeatable processes and library of lessons learned from previous projects, help us apply tested methodologies to complex environments while integrating state-of-the-art capabilities. We use our in-depth knowledge and extensive experience in applying advanced AI/ML tools and techniques to expand clients’ capabilities, including developing strategic and tactical plans, high-impact solutions, and the accompanying training to ensure that our solutions have an enduring impact.

Suite of Services

- Workforce Data Science, AI, and Technology Skills Assessments
- Data Science, Artificial Intelligence & Machine Learning Training Programs
- Cloud-Native Courses
- Artificial Intelligence Solutions
- UI/UX Analytics
- Executive Technology Coaching
- Predictive Models
● Project Ideation & Design Thinking
● Rapid Prototyping
● Data Integration
● Research + Development
GSA Awarded Pricing for SIN 54151S

The rates are inclusive of the Industrial Funding Fee (IFF) of 0.75%.

<table>
<thead>
<tr>
<th>Labor Category</th>
<th>04/15/19 – 04/14/20</th>
<th>04/15/20 – 04/14/21</th>
<th>04/15/21 – 04/14/22</th>
<th>04/15/22 – 04/14/23</th>
<th>04/15/23 – 04/14/24</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Science Coach</td>
<td>$122.17</td>
<td>$125.46</td>
<td>$128.85</td>
<td>$132.33</td>
<td>$135.90</td>
</tr>
<tr>
<td>Data Scientist</td>
<td>$162.72</td>
<td>$167.11</td>
<td>$171.63</td>
<td>$176.26</td>
<td>$181.02</td>
</tr>
<tr>
<td>Database Architect</td>
<td>$146.60</td>
<td>$150.56</td>
<td>$154.62</td>
<td>$158.80</td>
<td>$163.09</td>
</tr>
<tr>
<td>IT Teaching Assistant</td>
<td>$73.30</td>
<td>$75.28</td>
<td>$77.31</td>
<td>$79.40</td>
<td>$81.54</td>
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<tr>
<td>Senior Data Scientist</td>
<td>$196.98</td>
<td>$202.30</td>
<td>$207.76</td>
<td>$213.37</td>
<td>$219.13</td>
</tr>
<tr>
<td>Senior Developer</td>
<td>$146.60</td>
<td>$150.56</td>
<td>$154.62</td>
<td>$158.80</td>
<td>$163.09</td>
</tr>
</tbody>
</table>

Service Contract Labor Standards: The Service Contract Labor Standards (SCLS) are applicable to this contract as it applies to the entire Consolidated MAS Schedule and all services provided. While no specific labor categories have been identified as being subject to SCLS due to exemptions for professional employees (FAR 22.1101, 22.1102 and 29 CRF 541.300), this contract still maintains the provisions and protections for SCLS eligible labor categories. If and/or when the contractor adds SCLS labor categories/employees to the contract through the modification process, the contractor must inform the Contracting Officer and establish a SCLS matrix identifying the GSA labor category titles, the occupational code, SCLS labor category titles and the applicable WD number. Failure to do so may result in cancellation of the contract.
GSA Awarded Pricing for SIN 611420
The rates are inclusive of the Industrial Funding Fee (IFF) of 0.75%.

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Per Person Rate w/ IFF</th>
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</thead>
<tbody>
<tr>
<td>Data Science 101</td>
<td>$995.68</td>
</tr>
<tr>
<td>Data Science 201</td>
<td>$995.68</td>
</tr>
<tr>
<td>Data Science 301</td>
<td>$995.68</td>
</tr>
<tr>
<td>Executive Data Analytics Training</td>
<td>$962.72</td>
</tr>
<tr>
<td>Intermediate Data Science Bootcamp – 3 Days</td>
<td>$597.41</td>
</tr>
<tr>
<td>Introduction to Data Science Bootcamp – 2 Days</td>
<td>$399.70</td>
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</tbody>
</table>
SIN 54151S Labor Category Descriptions

Data Science Coach

**Functional Responsibilities:** The Data Science Coach is responsible for implementing a variety of machine learning algorithms and teaching students how to implement those algorithms in their own projects. The Data Science Coach is familiar with a variety of data mining and machine learning algorithms and can validate analyses for accuracy. The Data Science Coach knows how to implement production-grade code and can program in R, Python, or another object-oriented programming language, and can teach students how to do it.

**Minimum Education:** Master’s Degree  
**Minimum Experience:** 2 years

Data Scientist

**Functional Responsibilities:** The Data Scientist is responsible for implementing a variety of machine learning algorithms under the supervision of a Senior Data Scientist. The Data Scientist is familiar with a variety of data mining and machine learning algorithms and can validate analyses for accuracy. The Data Scientist knows how to implement production-grade code and can program in R, Python, or another object-oriented programming language.

**Minimum Education:** Master’s Degree  
**Minimum Experience:** 3 years

Database Architect

**Functional Responsibilities:** The Database Architect determines database structural requirements by analyzing client operations, applications, and programming environment. The Database Architect reviews objectives with clients, and identifies the technologies and architecture design that will best suit the client’s objectives and data structure. The Database Architect also develops security protocols, backup procedures, and recovery specifications.

**Minimum Education:** Bachelor’s Degree  
**Minimum Experience:** 1 year

IT Teaching Assistant

**Functional Responsibilities:** The IT Teaching Assistant has experience implementing a variety of data mining and machine learning algorithms on a variety of data sets and can explain how to perform this work clearly to students. The IT Teaching Assistant provides a variety of support to students to ensure that they learn object-oriented programming effectively and can implement machine learning algorithms and other data analysis correctly.

**Minimum Education:** Bachelor’s Degree  
**Minimum Experience:** 1 year
Senior Data Scientist

Functional Responsibilities: The Senior Data Scientist is an experienced algorithms expert who manages a team of data scientists. The Senior Data Scientist is responsible for the accuracy of data preparation, analysis and visualization who understands the pitfalls of data analysis and inductive reasoning. The Senior Data Scientist oversees data analysis projects and the development of data analysis and machine learning software. The expert is intimately familiar with a variety of algorithms and technologies necessary to work with data effectively.

Minimum Education: Master’s Degree
Minimum Experience: 7 years

Senior Developer

Functional Responsibilities: The Senior Developer is responsible for managing a team of programmers to build enterprise-grade software. The Senior Developer is responsible for collecting functional requirements for software tools, estimating development time, architecting the technologies and workflows required to enable enterprise-grade software, and overseeing its implementation. The Senior Developer is responsible for verifying the accuracy of code and software logic, debugging, troubleshooting issues, and identifying novel solutions to challenging software development problems. The Senior Developer is responsible for the proper functionality and accuracy of software that his or her team develops.

Minimum Education: Bachelor’s Degree
Minimum Experience: 5 years

Experience & Degree Substitution Equivalencies
Experience exceeding the minimum shown may be substituted for education. Likewise, education exceeding the minimum shown may be substituted for experience.

<table>
<thead>
<tr>
<th>Equivalent Degree</th>
<th>Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School</td>
<td>1 year of relevant experience</td>
</tr>
<tr>
<td>Associate’s</td>
<td>2 years relevant experience</td>
</tr>
<tr>
<td>Bachelor’s</td>
<td>Associate’s degree + 2 years relevant experience or 4 years relevant experience</td>
</tr>
<tr>
<td>Master’s</td>
<td>Bachelor’s plus 2 years relevant experience or Associate’s degree + 4 years relevant experience or 6 years relevant experience</td>
</tr>
<tr>
<td>PhD</td>
<td>Master’s + 2 years relevant experience, or Bachelor’s + 4 years relevant experience or Associate’s + 6 years relevant experience or 8 years relevant experience</td>
</tr>
</tbody>
</table>
### Title of Course: Data Science 101

<table>
<thead>
<tr>
<th>Location of Course:</th>
<th>Client site or live-streaming online</th>
<th>Length of Course (# of Hrs/Days):</th>
<th>5 days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Number of Participants:</td>
<td>15</td>
<td>Maximum Number of Participants:</td>
<td>45</td>
</tr>
</tbody>
</table>

### Course Prerequisites:
While no prerequisites are required, people with some experience working with data are best suited for this program. No background in math or programming is required.

### Support Materials Provided as Part of the Course (e.g., Training Manuals, CDs, DVDs):
Training Manuals, Data Analysis Code Scripts & Templates, Exercises, Assessment

### Description of Course, Including Major Objectives

**Option 1: Excel**
This five-day intensive training will turn employees into savvy data analysts with a solid foundation to tackle data cleaning, visualization, and basic modeling. Students will become proficient in Excel, a tool widely used for data cleaning and analysis. The workshop optimizes learning by integrating practice time and discussion time in class to improve retention and provide individualized support throughout the session. By the end of the course students will:

- Understand how data science can be used effectively in government
- Use Excel proficiently for data science
- Build basic models and find patterns in data
- Visualize findings for effective presentation

This course is ideal for professionals who:
- Have experience working with data in Excel, STATA, SPSS or other statistical software
- Need to clean and visualize large amounts of data quickly
- Want to streamline and improve data cleaning and visualization tasks
- Want to work with data more effectively to discover new insights
- Want to build predictive models to drive decision making

The course can be customized to the client’s use cases.

**Option 2: R**
This five-day intensive training will turn employees into savvy data analysts with a solid foundation to tackle data cleaning, visualization, and basic modeling. Students will become proficient in R, an open-source tool that is most widely used by professional data scientists. Built specifically for working with data, R is designed to perform analyses quickly with the latest machine learning methods, build beautiful visualizations and dashboards, and rapidly prototype software solutions and data-driven apps. The vast collection of community-contributed packages that are freely available online make R a powerful, scalable, and yet economical solution to your data analysis needs.

This training optimizes learning by integrating practice time and discussion time in class to improve retention and provide individualized support throughout the session. By the end of the course students will:
• Understand how data science can be used effectively in government
• Program proficiently in R
• Build basic models and find patterns in data
• Visualize findings effectively

This course is ideal for professionals who:
• Have experience working with data in Excel, STATA, SPSS or other statistical software
• Need to clean and visualize large amounts of data quickly
• Want to automate data cleaning and visualization tasks
• Want to work with data more effectively to discover new insights
• Want to build predictive models to drive decision making

The course can be customized to the client’s use cases.

Option 3: Python
This five-day intensive training will turn employees into savvy data analysts with a solid foundation to tackle data cleaning, visualization, and basic modeling. Students will become proficient in Python, an open-source and general-purpose programming language that is widely used in enterprise scale applications. Preferred by computer scientists and programmers, Python is the language of choice for cutting edge machine learning and AI applications. It is commonly used for putting models "into production" at an enterprise scale.

The workshop optimizes learning by integrating practice time and discussion time in class to improve retention and provide individualized support throughout the session. By the end of the course students will:
• Understand how data science can be used effectively in government
• Program proficiently in Python
• Build basic models and find patterns in data
• Visualize findings effectively

This course is ideal for professionals who:
• Have experience working with data in Excel, STATA, SPSS or other statistical software
• Need to clean and visualize large amounts of data quickly
• Want to automate data cleaning and visualization tasks
• Want to work with data more effectively to discover new insights
  • Want to build predictive models to drive decision making

The course can be customized to the client’s use cases.
### Title of Course: Data Science 201

<table>
<thead>
<tr>
<th>Location of Course:</th>
<th>Client site or live-streaming online</th>
<th>Length of Course (# of Hrs/Days):</th>
<th>5 days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Number of Participants:</td>
<td>15</td>
<td>Maximum Number of Participants:</td>
<td>45</td>
</tr>
</tbody>
</table>

**Course Prerequisites:**
Students who attend this course should have successfully completed the Data Science 101 training or should have an equivalent knowledge of data manipulation, basic statistics, and a good foundation in either R or Python, depending on the module selected for this program.

**Support Materials Provided as Part of the Course (e.g., Training Manuals, CDs, DVDs):**
Training Manuals, Data Analysis Code Scripts & Templates, Exercises, Assessment

**Description of Course, Including Major Objectives**

**Option 1: R**
This five-day intensive training builds upon a solid foundation in data science to turn employees into skilled data scientists who will be able to forecast trends, publish data dashboards, and build a variety of classification models. Students will learn how to forecast utilization rates, customer demand and a variety of other activities and behaviors. The workshop optimizes learning by integrating practice time and discussion time in class to improve retention and provide individualized support throughout the session. By the end of the course students will:
- Build unsupervised and supervised machine learning algorithms
- Select the appropriate data science method to solve a problem
- Clean and organize text data and analyze it
- Publish interactive visualizations and data analysis applications

This course is ideal for professionals who:
- Have a good working knowledge of R
- Need to build clear data visualizations to communicate findings
- Need to deploy commercial data cleaning, visualization and analysis applications
- Need to build classification and regression models to make decisions about equipment maintenance, hiring, employee retention and many other challenging problems
- Want to stand out as data scientists with advanced predictive modeling skills

The course can be customized to the client’s use cases.

**Option 2: Python**
This five-day intensive training builds upon a solid foundation in data science to turn employees into skilled data scientists who will be able to forecast trends and build a variety of clustering, classification, and regression models. Students will learn how to forecast utilization rates, customer demand and a variety of other activities and behaviors. The workshop optimizes learning by integrating practice time and discussion time in class to improve retention and provide individualized support throughout the session. By the end of the course students will:
- Build unsupervised and supervised machine learning algorithms
- Select the appropriate data science method to solve a problem
- Clean and organize text data and analyze it
This course is ideal for professionals who:

- Have a good working knowledge of Python
- Need to build clear data visualizations to communicate findings
- Need to deploy commercial data cleaning, visualization and analysis applications
- Need to build classification and regression models to make decisions about equipment maintenance, hiring, employee retention and many other challenging problems
- Want to stand out as data scientists with advanced predictive modeling skills

The course can be customized to the client’s use cases.
Title of Course: Data Science 301

<table>
<thead>
<tr>
<th>Location of Course:</th>
<th>Client site or live-streaming online</th>
<th>Length of Course (# of Hrs/Days):</th>
<th>5 days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Number of Participants:</td>
<td>15</td>
<td>Maximum Number of Participants:</td>
<td>45</td>
</tr>
</tbody>
</table>

Course Prerequisites:
Students who attend this course should have successfully completed the Data Science 201 training or should have an equivalent knowledge of clustering, regression and classification algorithms.

Support Materials Provided as Part of the Course (e.g., Training Manuals, CDs, DVDs):
Training Manuals, Data Analysis Code Scripts & Templates, Exercises, Assessment

Description of Course, Including Major Objectives

Option 1: R
This five-day intensive training gives data scientists the skills they need to mine high-dimensional data and build powerful predictive models. This workshop covers advanced topics in time-series analysis, clustering and classification that will focus on the predictive power of data science. The workshop optimizes learning by integrating practice time and discussion time in class to improve retention and provide individualized support throughout the session. By the end of the course students will:

- Build sophisticated time-series analyses to predict forecasts and trends
- Mine data based on distribution patterns to identify new trends
- Select the most critical features for classification and regression models from high-dimensional data sets
- Predict trends and behaviors with advanced classification techniques
- Communicate data findings effectively

This course is ideal for professionals who:
- Have a good working knowledge of R
- Need to build powerful predictive models
- Need to model cyclical or seasonal data such as, customer volumes, web traffic, employee behaviors, etc.
- Want to stand out as data scientists with advanced data mining, predictive modeling and classification skills

The course can be customized to the client’s use cases.

Option 2: Python
This five-day intensive training gives data scientists the skills they need to mine high-dimensional data and build powerful predictive models. This workshop covers advanced topics in time-series analysis, clustering and classification that will focus on the predictive power of data science. The workshop optimizes learning by integrating practice time and discussion time in class to improve retention and provide individualized support throughout the session. By the end of the course students will:

- Build sophisticated time-series analyses to predict forecasts and trends
- Mine data based on distribution patterns to identify new trends
- Select the most critical features for classification and regression models from high-dimensional data sets
- Predict trends and behaviors with advanced classification techniques
• Communicate data findings effectively

This course is ideal for professionals who:
• Have a good working knowledge of Python
• Need to build powerful predictive models
• Need to model cyclical or seasonal data such as, customer volumes, web traffic, employee behaviors, etc.
• Want to stand out as data scientists with advanced data mining, predictive modeling and classification skills

The course can be customized to the client’s use cases.
### Title of Course: Executive Data Analytics Training

<table>
<thead>
<tr>
<th>Location of Course:</th>
<th>Client site or live-streaming online</th>
<th>Length of Course (# of Hrs/Days):</th>
<th>2 days</th>
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</thead>
<tbody>
<tr>
<td>Minimum Number of Participants:</td>
<td>10</td>
<td>Maximum Number of Participants:</td>
<td>45</td>
</tr>
</tbody>
</table>

**Course Prerequisites:**
None

**Support Materials Provided as Part of the Course (e.g., Training Manuals, CDs, DVDs):**
Training Manuals, Exercise Books

### Description of Course, Including Major Objectives
This course is designed for a senior or otherwise managerial audience. It covers a breadth of data science use cases and shows attendees the opportunities that data science creates for organizations to increase the efficiency and effectiveness of their operations and to uncover novel insights. The course helps managers craft a data-driven strategy for their team and design an execution plan that includes identifying and recruiting the staff with the right skills, as well as training existing staff and selecting the best-of-breed technologies for enabling a data-driven organization.

By the end of the course, attendees will understand:
- How data science can be applied to their organization
- What are the different questions that data science can answer
- What types of methods and algorithms data science uses
- Which technologies an organization needs to have to maintain an advanced data analytics capability, and
- Which skills their teams need to have to maximize the power of data and machine learning.

Available modules to be included in the program:

(a) **Data Science Use Cases and Building Teams**
This module covers a breadth of data science use cases and shows attendees the opportunities that data science creates for organizations to increase the efficiency of their operations. It walks through the skill sets that are necessary for a team to execute data science projects and build data products and provides an overview of the latest tools and technologies that enable machine learning analyses. By the end of this module, attendees will grasp how to apply data science with their teams, the questions data science can (and cannot) answer, what types of methods and algorithms data science uses, and which technologies an organization needs to maintain an advanced data analytics capability.

(b) **Data Visualization and Storytelling**
This module covers the basics of data visualization, including how to select and design the best visuals for your purpose. Time is also devoted to misleading statistics and visual distortions and how the discerning data consumer can identify their use. Finally, the module covers data storytelling. Participants will walk away with an appreciation for the craft and a framework for persuading an audience with data and visual communication.

(c) **Building a Data-Driven Strategy**
This module covers a broad set of analytical approaches and demystifies the questions they can answer so leaders can plan and execute a strategy that suits their particular organizational goals. This module also covers the skill sets, systems, and processes required to transform teams into efficient and fully data-driven operations up and down the chain. By the end of the module, managers will have a clear framework for how to utilize data to drive efficiencies throughout their unique organization.

(d) Data Science Methods
This module explains the array of techniques that data scientists utilize so that managers have a clear grasp of which questions their analysts can answer and how managers can check the accuracy of the work of their technical staff. This module addresses data ethics, or the appropriate and moral utilization of data, to ensure that organizations avoid the pitfalls of improper use of data and analytics.
## Title of Course: Intermediate Data Science Bootcamp – 3 Days

<table>
<thead>
<tr>
<th>Location of Course:</th>
<th>Client site or live-streaming online</th>
<th>Length of Course (# of Hrs/Days):</th>
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<tbody>
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<td>Minimum Number of Participants:</td>
<td>17</td>
<td>Maximum Number of Participants:</td>
<td>45</td>
</tr>
</tbody>
</table>

### Course Prerequisites:
Students who attend this course should have a foundational knowledge of basic statistics, regression analysis, data manipulation and visualization in either Excel, R or Python, depending on the module they choose for this course.

### Support Materials Provided as Part of the Course (e.g., Training Manuals, CDs, DVDs):
Training Manuals, Data Analysis Templates, Exercises, Assessment

### Description of Course, Including Major Objectives

#### Option 1: Excel
This training builds upon a solid foundation in data manipulation in Excel to turn employees into skilled data scientists. Students will learn how to create optimization models and analyses, and perform introductory-level supervised and unsupervised machine learning analyses. Graduates of this training will be able to communicate effectively with data scientists and perform advanced data manipulation and intermediate-level analyses independently. The training optimizes learning by integrating practice time and discussion time in class to improve retention and provide individualized support throughout the session. The course also includes exercises that reinforce the concepts taught in the course and attestation. By the end of the course students will:

- Be able to format complex data in Excel, and automate conditional formatting for responsive spreadsheets
- Be able to create advanced formulas that turn spreadsheets into dynamic and responsive programs
- Create drop-down menus that allow people to run complex scenario analyses with point & click functionality
- Create optimization analyses that solve problems with many inputs and circular references
- Create basic clustering and basic classification models (machine learning) in Excel

This course is ideal for professionals who:

- Have a good working knowledge of Excel
- Need to perform intermediate and advanced data analyses in Excel
- Want to work with time-series data
- Want to automate their data processes
- Want to create introductory-level machine learning models in Excel

The course can be customized to the client’s use cases.

#### Option 2: R
This training builds upon a solid foundation in data manipulation in R to turn employees into skilled data scientists. Students will learn how to create optimization models and analyses, and perform introductory-level supervised and unsupervised machine learning analyses. Graduates of this training will be able to communicate effectively with data scientists and perform advanced data manipulation and intermediate-level analyses independently. The training optimizes learning by integrating practice...
time and discussion time in class to improve retention and provide individualized support throughout the session. The course also includes exercises that reinforce the concepts taught in the course as well as attestation. By the end of the course students will:

• Be able to create interactive visualizations that allow users to interact with data
• Be able to perform clustering analyses that find new patterns in data
• Be able to perform predictive classification analyses that help staff anticipate events and behaviors
• Be able to automate data manipulation and transformation functions saving a lot of time from mundane business processes

This course is ideal for professionals who:

• Have a good working knowledge of R
• Need to perform intermediate and advanced data analyses in R
• Want to automate their data processes
• Want to create introductory-level machine learning models in R

The course can be customized to the client’s use cases.

**Option 3: Python**

This training builds upon a solid foundation in data manipulation in Python to turn employees into skilled data scientists. Students will learn how to create optimization models and analyses, and perform introductory-level supervised and unsupervised machine learning analyses. Graduates of this training will be able to communicate effectively with data scientists and perform advanced data manipulation and intermediate-level analyses independently. The training optimizes learning by integrating practice time and discussion time in class to improve retention and provide individualized support throughout the session. The course also includes exercises that reinforce the concepts taught in the course and attestation. By the end of the course students will:

• Be able to perform clustering analyses that find new patterns in data
• Be able to perform predictive classification analyses that help staff anticipate events and behaviors
• Be able to automate data manipulation and transformation functions saving a lot of time from mundane business processes

This course is ideal for professionals who:

• Have a good working knowledge of Python
• Need to perform intermediate and advanced data analyses in Python
• Want to automate their data processes
• Want to create introductory-level machine learning models in Python

The course can be customized to the client’s use cases
<table>
<thead>
<tr>
<th>Title of Course: Introduction to Data Science Bootcamp – 2 Days</th>
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<tbody>
<tr>
<td><strong>Location of Course:</strong></td>
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<tr>
<td>Minimum Number of Participants:</td>
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**Course Prerequisites:**
While no prerequisites are required, people with some experience using Excel are best suited for this program. No background in math or data analysis is required.

**Support Materials Provided as Part of the Course (e.g., Training Manuals, CDs, DVDs):**
Training Manuals, Data Analysis Templates, Exercises, Assessment

**Description of Course, Including Major Objectives**

**Option 1: Excel**
This course will take employees from performing basic data analyses in Excel to cleaning and processing data and creating regression models and visualizations. The course will introduce foundational statistical concepts and train students in key data operations in Excel. Students will become comfortable with data manipulation, formatting, and visualization in Excel. The workshop optimizes learning by integrating practice time and discussion time in class to improve retention and provide individualized support throughout the session. By the end of the course students will:

- Have facility with basic functions in Excel
- Be able to manipulate, aggregate and re-order data in Excel
- Be able to clean and prepare data for analysis
- Have a fundamental understanding of basic statistics and statistical inference
- Be able to perform basic regression analyses in Excel and check for model validity
- Understand the pitfalls of regression and know when regression analysis is not an appropriate approach to use
- Create basic visualizations in Excel

This course is ideal for professionals who:
- Need to clean dirty data and order disorganized and disparate data sources
- Want to explore data in Excel efficiently
- Want to visualize data quickly in Excel
- Want to work with data more effectively to discover new insights

The course can be customized to the client’s use cases.

**Option 2: SQL**
This course will take employees from performing basic queries and data analyses with SQL to cleaning and processing data in an advanced way. The course will provide an overview of databases, best practices for data storage and database maintenance and a variety of storage schemas. The course will introduce foundational statistical concepts and train students in key data operations in SQL. Students will become comfortable with data manipulation, formatting, loading and exporting. The workshop optimizes learning by integrating practice time and discussion time in class to improve retention and provide individualized support throughout the session. By the end of the course students will:

- Have facility with basic functions in SQL
- Be able to manipulate, aggregate and re-order data in SQL
- Be able to load data into a SQL database and export data from SQL
- Be able to set up custom database schemas
- Be able to clean and prepare data for analysis
- Have a fundamental understanding of basic statistics and statistical inference
- Be able to perform basic regression analyses in SQL and check for model validity
- Understand the pitfalls of regression and know when regression analysis is not an appropriate approach to use

This course is ideal for professionals who:
- Need to clean dirty data and order disorganized and disparate data sources
- Want to explore data in SQL efficiently
- Want to work with data more effectively to discover new insights

**Option 3: R**

This course will take employees through the basics of R programming to facility with cleaning, formatting, and preparing data for analysis. Students will become comfortable in R, an open-source tool that is widely used by professional data scientists. Built specifically for working with data, R is designed to perform analyses quickly with the latest machine learning methods, build beautiful visualizations and dashboards, and rapidly prototype software solutions and data-driven apps. The vast collection of community-contributed packages that are freely available online make R a powerful, scalable, and yet economical solution to your data analysis needs.

This course will introduce foundational statistical concepts and train students in key data operations in R. Students will learn how to create regression models and produce findings in a clear and presentable manner. And they will become familiar with data manipulation, formatting, and visualization in R, which can dramatically reduce the time it takes to analyze data compared to Excel.

The training optimizes learning by integrating practice time and discussion time in class to improve retention and provide individualized support throughout the session. By the end of the course, students will:
- Have facility with basic functions in R
- Be able to manipulate, aggregate and re-order data in R
- Be able to clean and prepare data for analysis
- Have a fundamental understanding of basic statistics and statistical inference
- Be able to perform basic regression analyses in R and check for model validity
- Understand the pitfalls of regression and know when regression analysis is not an appropriate approach to use
- Create basic visualizations in R

This course is ideal for professionals who:
- Need to clean dirty data and order disorganized and disparate data sources
- Want to speed up data analysis and presentation that they currently perform in Excel
- Want to explore data in R efficiently
- Want to visualize data quickly in R
- Want to work with data more effectively to discover new insights
The course can be customized to the client’s use cases.

**Option 4: Python**

This course will take employees from the basics of Python programming to facility with cleaning, formatting, and preparing data for analysis. Students will become familiar with Python, an open-source and general-purpose programming language that is widely used for building enterprise scale software. Preferred by computer scientists and programmers, Python is the language of choice for cutting edge machine learning and AI applications. It is commonly used for putting models “into production” at an enterprise scale.

This course will introduce foundational statistical concepts and train students in key data operations in Python. Students will learn how to create regression models and produce findings in a clear and presentable manner. And they will become familiar with data manipulation, formatting, and visualization in Python, which can dramatically reduce the time it takes to analyze data compared to Excel.

The training optimizes learning by integrating practice time and discussion time in class to improve retention and provide individualized support throughout the session. By the end of the course students will:

- Have facility with basic functions in Python
- Be able to manipulate, aggregate and re-order data in Python
- Be able to clean and prepare data for analysis
- Have a fundamental understanding of basic statistics and statistical inference
- Be able to perform basic regression analyses in R and check for model validity
- Understand the pitfalls of regression and know when regression analysis is not an appropriate approach to use
- Create basic visualizations in Python

This course is ideal for professionals who:

- Need to clean dirty data and order disorganized and disparate data sources
- Want to speed up data analysis and presentation that they currently perform in Excel
- Want to explore data in Python efficiently
- Want to visualize data quickly in Python
- Want to work with data more effectively to discover new insights

The course can be customized to the client’s use cases.