Office of Apprenticeship
U.S. Department of Labor

Work Process Schedule

Data Analyst	
Job Description: Develop or apply mathematical or statistical theory and methods to collect, organize, interpret, and summarize numerical data to provide usable information. May specialize in fields such as biostatistics, agricultural statistics, business statistics, or economic statistics. Includes mathematical and survey statisticians.	
RAPIDS Code: 2099CB	**O*NET Code:** 15-2041.00
Estimated Program Length: 1 Year	
Apprenticeship Type: ☒ Competency-Based ☐ Time-Based ☐ Hybrid	

Suggested On-the-Job Learning Outline

Determine appropriate methods for data analysis.		
Competencies	**Date Completed**	**Initial**
A. Evaluate the statistical methods and procedures used to obtain data to ensure validity, applicability, efficiency, and accuracy.		
B. Determine whether statistical methods are appropriate, based on user needs or research questions of interest.		
C. Plan data collection methods for specific projects, and determine the types and sizes of sample groups to be used.		
D. Apply sampling techniques, or use complete enumeration bases to determine and define groups to be surveyed.		

Analyze data to identify trends or relationships among variables.		
Competencies	**Date Completed**	**Initial**
A. Analyze and interpret statistical data to identify significant differences in relationships among sources of information.		
B. Identify relationships and trends in data, as well as any factors that could affect the results of research.		

Evaluate project designs to determine adequacy or feasibility.		
Competencies	**Date Completed**	**Initial**
A. Evaluate the statistical methods and procedures used to obtain data to ensure validity, applicability, efficiency, and accuracy.		

Prepare analytical reports.		
Competencies	**Date Completed**	**Initial**
A. Report results of statistical analyses, including information in the form of graphs, charts, and tables.		
B. Report results of statistical analyses in peer-reviewed papers and technical manuals.		

Evaluate technical data to determine effect on designs or plans.		
Competencies	**Date Completed**	**Initial**
A. Determine whether statistical methods are appropriate, based on user needs or research questions of interest.		

Prepare graphics or other visual representations of information.		
Competencies	**Date Completed**	**Initial**
A. Report results of statistical analyses, including information in the form of graphs, charts, and tables.		

Evaluate data quality.		
Competencies	**Date Completed**	**Initial**
A. Prepare data for processing by organizing information, checking for inaccuracies, and adjusting and weighting the raw data.		
B. Evaluate sources of information to determine any limitations, in terms of reliability or usability.		

Prepare data for analysis.		
Competencies	**Date Completed**	**Initial**
A. Prepare data for processing by organizing information, checking for inaccuracies, and adjusting and weighting the raw data.		
B. Process large amounts of data for statistical modeling and graphic analysis, using computers.		

Design research studies to obtain scientific information.		
Competencies	**Date Completed**	**Initial**
A. Develop and test experimental designs, sampling techniques, and analytical methods.		
B. Design research projects that apply valid scientific techniques, and use information obtained from baselines or historical data to structure uncompromised and efficient analyses.		
C. Plan data collection methods for specific projects, and determine the types and sizes of sample groups to be used.		

Present research results to others.		
Competencies	**Date Completed**	**Initial**
A. Present statistical and nonstatistical results, using charts, bullets, and graphs, in meetings or conferences to audiences such as clients, peers, and students.		
B. Report results of statistical analyses in peer-reviewed papers and technical manuals.		

Apply mathematical principles or statistical approaches to solve problems in scientific or applied fields.		
Competencies	**Date Completed**	**Initial**
A. Adapt statistical methods to solve specific problems in many fields, such as economics, biology, and engineering.		

Design software applications.		
Competencies	**Date Completed**	**Initial**
A. Develop software applications or programming for statistical modeling and graphic analysis.		

Update knowledge about emerging industry or technology trends.		
Competencies	**Date Completed**	**Initial**
A. Examine theories, such as those of probability and inference, to discover mathematical bases for new or improved methods of obtaining and evaluating numerical data.		

Implement security measures for computer or information systems.		
Competencies	**Date Completed**	**Initial**
A. Prepare and structure data warehouses for storing data.		

Install computer software.		
Competencies	**Date Completed**	**Initial**
A. Prepare and structure data warehouses for storing data.		

Write computer programming code.		
Competencies	**Date Completed**	**Initial**
A. Prepare and structure data warehouses for storing data.		

Supervise information technology personnel.		
Competencies	**Date Completed**	**Initial**
A. Supervise and provide instructions for workers collecting and tabulating data.		

Suggested Related Instruction Outline

Provider	
Name:	
Address:	
Email:	**Phone Number:**
Suggested Related Instruction Hours: X	

*CIP Code	Course Title	Contact Hours
27.0503	Mathematics and Statistics	
27.0599	Statistics, Other	
30.7102	Business Analytics	
27.0601	Applied Statistics, General	
52.1302	Business Statistics	
30.4901	Mathematical Economics	
26.1311	Epidemiology and Biostatistics	
30.7199	Data Analytics, Other	
27.0301	Applied Mathematics, General	
13.0603	Educational Statistics and Research Methods	
13.0604	Educational Assessment, Testing, and Measurement	
27.0304	Computational and Applied Mathematics	
42.2708	Psychometrics and Quantitative Psychology	
13.0608	Institutional Research	
13.0699	Educational Assessment, Evaluation, and Research, Other	
26.1101	Biometry/Biometrics	
30.7001	Data Science, General	
45.0102	Research Methodology and Quantitative Methods	

26.1102	Biostatistics	
27.0501	Statistics, General	
30.7099	Data Science, Other	
45.0103	Survey Research/Methodology	
27.0101	Mathematics, General	
27.0502	Mathematical Statistics and Probability	
30.7101	Data Analytics, General	
45.0603	Econometrics and Quantitative Economics	
Total		

*If related course number data are available, information displayed includes the Classification of Instructional Programs (CIP) code that best represents the field of study, course, or program. CIP provides a taxonomic scheme that supports the accurate tracking and reporting of educational programs. CIP is developed and maintained by the U.S. Department of Education.