

**SKILLS FRAMEWORK FOR FINANCIAL SERVICES
TECHNICAL SKILLS AND COMPETENCIES (TSC) REFERENCE DOCUMENT**

TSC Category	Data Analytics and Information Technology Management					
TSC	Data Analytics and Computational Modelling					
TSC Description	Develop, select and apply statistical techniques, algorithms and advanced computational methods to enable systems or software agents to learn, improve, adapt and produce business insights and intelligence to address a specific issue or requirement					
TSC Proficiency Description	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
			FSE-DAT-3019-1.1	FSE-DAT-4019-1.1	FSE-DAT-5019-1.1	
			Identify and utilise appropriate statistical algorithms and data models to perform data analyses, test hypotheses and derive inferences, patterns or solutions from data	Develop and utilise new algorithms and advanced statistical models to enable the production of business insights, intelligence and drive decision making	Design and drive conduct of advanced statistical and computational models, and spearhead the application of algorithms and modelling techniques to new domains	
Knowledge			<ul style="list-style-type: none"> • Data analytics and modelling business use cases • Types of statistical analyses, data models, algorithms and advanced computational methods • Range and application of various statistical methods and algorithms • Range and application of various types of data models • Usage of analytics platforms and tools • Statistical modelling techniques • Coding languages for programming of algorithms and signals • Potential reasons for unintended outcomes • Forms of data within financial services 	<ul style="list-style-type: none"> • Gaps between business needs and existing data models • Data interpretation tools and trend analysis techniques • Range of statistical and advanced computational modelling techniques • Advanced mathematical models, theories and elements of various algorithms • Features and applicability of various data models • Features, pros and cons of various statistical approaches, algorithms and tools • Testing procedures to evaluate statistical models • Impact of changes to algorithms and models on performance outcomes 	<ul style="list-style-type: none"> • Organisational data science, data analytics and modelling strategies • Industry developments and trends in analytics, algorithms and statistical modelling • New and emerging data analytics and modelling tools and methodologies • Broad range of algorithms and advanced programming techniques • Elements of complex or advanced algorithms and computational models • Applicability of various data analytics methodologies and techniques to address different business issues 	

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<p>Abilities</p>			<ul style="list-style-type: none"> • Develop hypotheses for implementing data analytics and computational modelling activities • Identify appropriate statistical algorithms and data models to test hypotheses and/or theories • Use appropriate analytics platforms, analytical tools, statistical methods and analytical approaches given specific analytics and reporting requirements • Conduct statistical modelling of data to derive patterns and solutions • Perform A/B testing based on different hypotheses • Identify possible big data applications • Perform coding and configuration of software agents or programs based on selected models or algorithms • Conduct tests on the actions taken and outcomes to assess effectiveness of the models • Diagnose unintended outcomes produced by statistical models • Draw relevant trends and insights from data analysis to support 	<ul style="list-style-type: none"> • Define research objectives for data analytics and computational modelling activities • Evaluate prospective analytical tools and platforms to determine their ability to meet requirements Develop new algorithms, proof of concept methods, and regression models to enable enhanced modelling • Develop mathematical models to isolate trends and optimise data-driven decision making • Develop testing procedures to evaluate data models and analyse root causes of issues • Facilitate changes to statistical models, to optimise performance and yield intended outcomes • Apply complex and advanced statistical analysis and modelling techniques to uncover relationships between variables • Evaluate implementation of Big Data approaches and techniques • Review and validate preliminary data analysis and computational modelling findings • Translate insights and patterns embedded in 	<ul style="list-style-type: none"> • Define data science, data modelling and data analytics strategies aligned to organisational goals • Direct data analytics and statistical modelling efforts across the organisation • Suggest appropriate data analytics and computational methodologies • Direct design of advanced statistical and computational models • Evaluate a broad range of algorithms and advanced computational methods to ensure suitability for business case • Spearhead the conceptualisation, development and application of algorithms, models and computational techniques • Establish guidelines for the creation and selection of effective algorithms and statistical models • Synthesise critical findings and insights to address significant business needs or problems • Decipher overall patterns and trends from analyses to assess implications to business 	
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			decisions and report accordingly	data into language the business can understand and make use of		
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