## Business Management: Business Data Analysis

### TSC Description
Implement data analytics within the organisation to generate business insights and intelligence through the use of statistical and computational techniques and tools, algorithms, predictive data modelling and data visualisation.

<table>
<thead>
<tr>
<th>TSC Proficiency Description</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
<th>Level 5</th>
<th>Level 6</th>
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</thead>
<tbody>
<tr>
<td>Identify underlying trends and patterns in business data using statistical and computational techniques and tools</td>
<td>TOU-BIN-2104-1.1</td>
<td>TOU-BIN-3104-1.1</td>
<td>TOU-BIN-4104-1.1</td>
<td>TOU-BIN-5104-1.1</td>
<td>Manage and enhance organisational data science capability by refining financial and other business performance criteria and designing data studies</td>
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<tr>
<td>Develop, apply and evaluate algorithms, predictive data modelling and data visualisation to identify underlying trends and patterns in data</td>
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<tr>
<td>Design and conduct data studies to drive organisational decisions and insights</td>
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### Knowledge
- Principles of data modelling and data visualisation
- Techniques used in data science and how to apply them
- Range of data protection and legal issues
- Range of functional languages that can be applied for business insights
- Methods to apply statistical techniques and machine learning
- Importance of the domain context for data science
- Underlying data structures involved in data science
- Organisational domains and key business processes
- Methods to use analytics to tell the story of the data
- Methods to use exploratory visual analysis and predictive modelling
- Methods to identify and prioritise the problems to be solved
- Methods to develop prototype algorithms
- Methods to build a data model
- Methods to use data mining to discover new business insights
- Methods to interpret patterns in data and their relevance to business issues
- Range of established and novel tools and techniques used in developing new business insights
- Organisational benefits of business insights
- Methods to evaluate data science solutions in contributing to efficiency, growth and return on investment
- Methods to identify and interpret the implications of data patterns
- Methods to prioritise proposed data science projects
- Methods to approach a business problem and come up with a solution that leverages the available data
- Methods to run complex data mining models
- Methods to explore a data set visually and analytically
- Methods to manage the capacity to perform data science projects
- Application of statistics, data mining and data
- Organisational context for data and the opportunities that data analytics can provide
- Business processes that use and manipulate data
- Methods to develop and maintain controls for data quality
- Methods to define and manage policies and programs for data stewardship
- Impact that data analysis has on business service offerings
- Horizon scanning methods
### Abilities

- **Methods to apply complex software tools to analyse data**
- **Use of statistical techniques, experimental techniques and hypothesis testing**
- **Modelling and the application of relevant tools and techniques**
- **Methods to measure the capability of the data science teams**

<table>
<thead>
<tr>
<th>Abilities</th>
<th>Methods/Techniques</th>
<th>Interpretations of data patterns on business problem scenarios</th>
<th>Formulate the organisation’s data science capability to inform business decision-making</th>
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</thead>
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<tr>
<td>Use data mining, time series forecasting and modelling techniques to identify and predict trends and patterns in data</td>
<td>Apply predictive data modelling techniques to identify underlying trends and patterns in data using statistical computing tools, methods and procedures</td>
<td>Exploit business data to extract insights</td>
<td>Lead the implementation of the data science strategies, policies, procedures and metrics to support organisational requirements</td>
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<td>Assist with data transformation, quality checking and cleansing into digestible data sets</td>
<td>Identify patterns across multiple data sets to derive insights</td>
<td>Manage data science projects</td>
<td>Oversee the design, collection, retrieval and analysis of forecasting and performance data</td>
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<td>Perform database queries across multiple tables/ unions to extract relevant data</td>
<td>Develop prototype algorithms and proof of concept demonstrations</td>
<td>Configure and customise data models to investigate organisational business hypotheses</td>
<td>Produce ad hoc analyses and management reports for senior management</td>
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<td>Perform appropriate data analyses on distinct data sets</td>
<td>Make decisions about which patterns are meaningful, and which to further analyse</td>
<td>Manage organisational capacity for performing data science projects</td>
<td>Develop and maintain controls on data quality, inter-operability and sources to manage risks</td>
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<td>Produce performance dashboards and insight reports</td>
<td>Assemble data aggregations to build data models to help test problem hypotheses</td>
<td>Run complex data mining models to provide business insights in line with organisational procedures</td>
<td>Define and manage policies and programs for data stewardship and custodianship in line with legal, information security corporate risk and compliance requirements</td>
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<td>Assist in the production of a range of business insight reports</td>
<td>Use machine learning techniques to gain new insights from data</td>
<td>Communicate the results of data science projects</td>
<td>Conduct horizon scans to identify, evaluate and implement new technologies and techniques which may contribute to the success</td>
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<td>Summarise and present business insights developed from data studies</td>
<td>Mine data to find relevant insights to develop ongoing improvements</td>
<td>Make recommendations to guide organisational decision-making</td>
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<td>• Use industry standard tools and techniques for data visualisation in line with organisational procedures</td>
<td>of the organisation’s data analysis capability</td>
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**SKILLS FRAMEWORK FOR TOURISM**
**TECHNICAL SKILLS & COMPETENCIES (TSC) REFERENCE**