# Subject Description Form

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>COMP1433</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject Title</td>
<td>Introduction to Data Analytics</td>
</tr>
<tr>
<td>Credit Value</td>
<td>3</td>
</tr>
<tr>
<td>Level</td>
<td>1</td>
</tr>
<tr>
<td>Pre-requisite / Co-requisite / Exclusion</td>
<td>Nil</td>
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</tbody>
</table>

## Objectives

The objectives of this subject are to:

- understand data analytics concepts
- apply data analytics tools
- strengthen students’ mathematics background for computing

## Intended Learning Outcomes

Upon completion of the subject, students will be able to:

**Professional/academic knowledge and skills**

(a) understand basic data analytics concepts
(b) manipulate, analyze and visualize data
(c) understand and apply related mathematics operations

## Subject Synopsis/Indicative Syllabus

<table>
<thead>
<tr>
<th>Topic</th>
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| **1. Data Analytics Basics**  
Defining data requirements, collecting data, processing data, cleaning data and analyzing data |
| **2. Data Processing**  
Data manipulation, data analysis, data visualization |
| **3. Statistical Analysis**  
Basic statistical functions, linear regression, time series analysis |
| **4. Linear Algebra and Calculus**  
Vector basics, matrix basics, differentiation, integration, finding maxima and minima |

The aforementioned topics will be taught with the aid of a suitable programming language such as R.
### Teaching/Learning Methodology

Lectures on data analytics and mathematics concepts (e.g., using R) will be given through lectures. There will be in-class activities for active learning. Hands-on lab/exercises will be arranged for students to practice data analytics tools. Students will also be required to study e-learning materials.

### Assessment Methods in Alignment with Intended Learning Outcomes

<table>
<thead>
<tr>
<th>Specific assessment methods/tasks</th>
<th>% weighting</th>
<th>Intended subject learning outcomes to be assessed (Please tick as appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Continuous Assessment</strong></td>
<td>45%</td>
<td>a</td>
</tr>
<tr>
<td>1. Assignments, Test, Quizzes</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td><strong>Examination</strong></td>
<td>55%</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100%</td>
<td></td>
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</tbody>
</table>

The assignments/test/quizzes (individual assessment) are used to assess learning outcomes (a) – (c) (e.g., how to apply R). Finally, students are assessed by a formal examination, covering learning outcomes (a) – (c).

### Student Study Effort Expected

**Class contact:**
- Class/Learning Activities 39 Hrs.

**Other student study effort:**
- Self-study, Assignments, e-Learning 78 Hrs.

**Total student study effort** 107 Hrs.

### Reading List and References

**Reference Books:**