3.3.1 Bachelor of Technology (Business Analytics)

The BTech (Business Analytics) programme is offered in partnership with the School of Computing. The BTech (Business Analytics) programme enables students to attain the following learning outcomes by the time of graduation:

1. Strong knowledge of data analytics foundations and fundamentals, including:
   a. familiarity with data analytics and programming principles, and
   b. high and broad understanding of the application of analytics in various industrial domains.
2. An ability to function effectively in teams to accomplish a common goal.
3. An understanding of professional, ethical, legal, security, and social issues and responsibilities of analytics professionals.
4. An ability to analyse the local and global impact of data analytics on individuals, organisations and society.
5. Clear recognition of the need for and an ability to engage in continuing professional development.

Degree Requirements

Candidates must satisfy the following requirements to be conferred the degree of BTech (Business Analytics):

- Complete a minimum of **160 MCs** with a minimum CAP of 2.0 by taking modules as listed below;
- Comply with the requirement that the limit on the number of Level-1000 modules to be counted towards fulfillment of graduation requirements being 60 MCs (including exemption of 20 MCs for polytechnic diploma holders); and
- Satisfy any other additional requirements that may be prescribed by SCALE, the School of Computing, or the University.

List of modules - BTech (Business Analytics), comprise:

All modules are 4MCs, except when otherwise stated.

A. University Level Requirements (20MCs)
   - Human Cultures (module with prefix GEH)
   - Asking Questions (module with prefix GEQ)
   - Quantitative Reasoning (module with prefix GER)
   - Singapore Studies (module with prefix GES)
   - Thinking and Expression (module with prefix GET)

B. Programme Requirements (112MCs), comprising
   1. Major Requirements - Essential Modules (92MCs)

   Computing Foundations
   - TBA2103 Data Visualisation
   - TBA2105 Web Mining
   - TIC1001 Introduction to Computing and Programming I
   - TIC1002 Introduction to Computing and Programming II
   - TIC1101 Professional, Ethical and Social Issues in Computing
- TIC2001 Data Structures and Algorithms
- TIC2003 Software Development Project
- TIC2601 Database and Web Applications
- TIC2901 Communication for Computing Professionals
- TIC3901 Industrial Practice (12MCs)

**Business Analytics Requirements**
- TBA2101 Building an Analytics Organisation
- TBA2102 Introduction to Business Analytics
- TBA2104 Predictive Analytics
- TBA3102 Text Analytics
- TBA3241 Social Media Analytics
- TIC4902 Capstone Computing Project (12MCs)

**Mathematics Requirements**
- TMA1001 Introductory Mathematics
- TMA2101 Calculus for Computing
- TMA2103 Probability and Statistics

2. **Major Requirements – Elective Modules (20MCs, selected from the list below)**
   - At least 3 out of 5 modules must be at level 4000.
   - Not all electives modules may be offered in any semester/year. An elective module may not be offered if there is insufficient number of students opting for that module at any particular time.
     - TBA3150 Mobile App and Game Analytics
     - TBA3222 Marketing Analytics
     - TBA4204 Financial Analytics
     - TBA4215 Workforce Analytics
     - TBA4220 Geospatial Analytics
     - TBA4230 Audit Analytics
     - TBA4250 Healthcare Analytics

C. **Unrestricted Elective Modules (28MCs)**
Note: 20 MCs will normally be given as Advanced Placement Credits to holders of diploma or higher qualifications. Students will need to complete the remaining 8MCs.

**Study Schedule**

There is only one intake per academic year in Semester 1 (i.e. August). One sample study schedule is shown below. This assumes the students’ work and other commitments allow them sufficient time to properly cope with their studies. Students are strongly advised to slow down if necessary so that they progress at their own comfortable pace.

**A. Sample Study Schedule (beginning in Semester 1 of an Academic Year):**
1. The number of Modular Credits (MC) of a module is denoted by the number in the bracket.
2. Modules marked with an asterisk (*) are modules stretching over more than one semester and the total number of MCs will only be given upon completion of the module.
3. Modules marked with (^) are for students who are able to attend day classes for General Education modules only. Alternatively, students may take General Education modules in the evenings in other Semesters or Special Terms.
### 1st Year of studies

<table>
<thead>
<tr>
<th>Semester</th>
<th>Modules</th>
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</table>
| Sem 1:   | TIC1001 Introduction to Computing and Programming I (4)  
          | TIC1101 Professional, Ethical and Social Issues in Computing (4)  
          | TMA1001 Introductory Mathematics (4)  
          | *General Education Module (4) |
| Sem 2:   | TBA2102 Introduction to Business Analytics (4)  
          | TIC1002 Introduction to Computing and Programming II (4)  
          | TMA2101 Calculus for Computing (4)  
          | *General Education Module (4) |
| SpTerm:  | General Education Module (4)  
          | TBA2101 Building An Analytics Organisation (4) |

### 2nd Year of studies

<table>
<thead>
<tr>
<th>Semester</th>
<th>Modules</th>
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</table>
| Sem 1:   | TIC2001 Data Structures and Algorithms (4)  
          | TIC2601 Database and Web Applications (4)  
          | TMA2103 Probability and Statistics (4) |
| Sem 2:   | TIC2003 Data Development Project (4)  
          | TBA2103 Data Visualisation (4)  
          | TBA2104 Predictive Analytics (4)  
          | General Education Module (4) |
| SpTerm:  | General Education Module (4)  
          | *TIC3901 Industrial Practice |

### 3rd Year of studies

<table>
<thead>
<tr>
<th>Semester</th>
<th>Modules</th>
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</table>
| Sem 1:   | TBA2105 Web Mining (4)  
          | TBA3241 Social Media Analytics (4)  
          | TIC2901 Communications for Computing Professionals (4)  
          | *TIC3901 Industrial Practice (12) |
| Sem 2:   | TBA3102 Text Analytics (4)  
          | Elective Module 1 (4)  
          | Elective Module 2 (4)  
<pre><code>      | *TIC4902 Capstone Computing Project |
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<table>
<thead>
<tr>
<th>SpTerm:</th>
<th>*TIC4901 Independent Project</th>
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<tbody>
<tr>
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<td>*TIC4902 Capstone Computing Project</td>
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</table>

**4th Year of studies**

<table>
<thead>
<tr>
<th>Sem 1:</th>
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<tbody>
<tr>
<td>Elective Module 3 (4)</td>
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<tr>
<td>Elective Module 4 (4)</td>
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<tr>
<td>Elective Module 5 (4)</td>
</tr>
<tr>
<td>*TIC4901 Independent Project (8)</td>
</tr>
<tr>
<td>*TIC4902 Capstone Computing Project (12)</td>
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