FACULTY OF ENGINEERING, COMPUTER AND MATHEMATICAL SCIENCES
PRE-2019 COMMENCER STUDY PLAN

School of Computer Science

**Semester 1 Start**
Bachelor of Computer Science
Bachelor of Computer Science (Computer Science Major)
Bachelor of Computer Science (Artificial Intelligence Major)
Bachelor of Computer Science (Data Science Major)
Bachelor of Computer Science (Cyber Security Major)
Bachelor of Computer Science (Distributed Systems and Networking Major)
Bachelor of Computer Science (Advanced)
Bachelor of Computer Science (Advanced)(Computer Science Major)
Bachelor of Computer Science (Advanced)(Artificial Intelligence Major)
Bachelor of Computer Science (Advanced)(Data Science Major)
Bachelor of Computer Science (Advanced)(Cyber Security Major)
Bachelor of Computer Science (Advanced)(Distributed Systems and Networking Major)
Honours Degree of Bachelor of Computer Science
Bachelor of Engineering (Software)

**Semester 2 Start**
Bachelor of Computer Science
Bachelor of Computer Science (Computer Science Major)
Bachelor of Computer Science (Artificial Intelligence Major)
Bachelor of Computer Science (Data Science Major)
Bachelor of Computer Science (Cyber Security Major)
Bachelor of Computer Science (Distributed Systems and Networking Major)
Bachelor of Computer Science (Advanced)
Bachelor of Computer Science (Advanced)(Computer Science Major)
Bachelor of Computer Science (Advanced)(Artificial Intelligence Major)
Bachelor of Computer Science (Advanced)(Data Science Major)
Bachelor of Computer Science (Advanced)(Cyber Security Major)
Bachelor of Computer Science (Advanced)(Distributed Systems and Networking Major)
Honours Degree of Bachelor of Computer Science
Bachelor of Engineering (Software)
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### BACHELOR OF COMPUTER SCIENCE

| YEAR 1 | S1 | COMP SCI 1101 Introduction to Programming  
ENG 1002 Programming (Matlab and C) * See note below | Level I Elective # or MATHS 1011 Mathematics IA ** | Level I Elective # | Level I Elective # |
|--------|----|-----------------------------------------------|-----------------------------------------------|-------------------|-------------------|
| S2     |    | COMP SCI 1102 Object Oriented Programming      | MATHS 1008 Mathematics for Information Technology I  
MATHS 1004 Mathematics for Data Science I or MATHS 1012 Mathematics IB ** | Level I Elective # | COMP SCI 1106 Introduction to Software Engineering |
|        |    |                                               |                                               |                   |                   |
| YEAR 2 | S1 | COMP SCI 2103 Algorithm Design and Data Structures | Level I, II or III Elective # | COMP SCI 2207 Web & Database Computing | COMP SCI 2000 Computer Systems |
|        | S2 | COMP SCI 2201 Algorithm & Data Structure Analysis | Level II Elective # | Level II Elective # | Level I, II or III Elective # |
|        |    |                                               |                                               |                   |                   |
| YEAR 3 | S1 | COMP SCI Level III Elective (3 units)          | MATHS 3025 Professional Practice III or ENTREP 3901 Tech eChallenge | COMP SCI Level III Elective | Level III Elective # |
|        | S2 | COMP SCI 3006 Software Engineering & Project   | COMP SCI Level III Elective                   | COMP SCI 3004 Operating Systems | COMP SCI Level III Elective |
### CHOOSE FROM THE FOLLOWING COMPUTER SCIENCE ELECTIVES

<table>
<thead>
<tr>
<th>SEMESTER 1</th>
<th>COMP SCI 1010 Puzzle Based Learning</th>
<th>COMP SCI 1012 Scientific Computing - ENG 1002 Programming (Matlab and C)</th>
<th>COMP SCI 1101 Introduction to Programming - ENG 1002 Programming (Matlab and C)</th>
<th>COMP SCI 2005 Systems Programming</th>
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<tr>
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<td>COMP SCI 3005 Computer Architecture</td>
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<td>COMP SCI 3306 Mining Big Data</td>
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<td>SEMESTER 2</td>
<td>COMP SCI 1101 Introduction to Programming - ENG 1002 Programming (Matlab and C)</td>
<td>COMP SCI 2203 Problem Solving and Software Development</td>
<td>COMP SCI 2204 Advanced Programming Paradigms</td>
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<td>COMP SCI 3012 Distributed Systems</td>
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**NOTES:**

*STUDENTS WITH PRIOR PROGRAMMING EXPERIENCE:
Do not need to complete ENG 1002 Programming (Matlab and C) and can replace it with an Elective. If it is replaced, the following courses must be completed in the order, first COMP SCI 1102, then COMP SCI 2103 and then COMP SCI 2201. However, these courses and COMP SCI 2000 may be completed one semester earlier than shown above.

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### BACHELOR OF COMPUTER SCIENCE— Semester 2 Start

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<th>COURSE</th>
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<th>YEAR 2</th>
<th>S2</th>
<th>COURSE</th>
<th>YEAR 3</th>
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<td>COMP SCI 1101 Introduction to Programming</td>
<td>ENG 1002 Programming (Matlab and C) * See note below</td>
<td>MATHS 1008 Mathematics for Information Technology I</td>
<td>MATHS 1004 Mathematics for Data Science I or MATHS 1011 Mathematics IA **</td>
<td>Level I Elective #</td>
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### FACULTY OF ENGINEERING, COMPUTER AND MATHEMATICAL SCIENCES

**PRE-2019 COMMENCER STUDY PLAN**

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<thead>
<tr>
<th>SEMESTER 1</th>
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<tr>
<td>COMP SCI 1010 Puzzle Based Learning</td>
<td>COMP SCI 1101 Introduction to Programming - ENG 1002 Programming (Matlab and C)</td>
</tr>
<tr>
<td>COMP SCI 3005 Computer Architecture</td>
<td>COMP SCI 1102 Scientific Computing - ENG 1002 Programming (Matlab and C)</td>
</tr>
<tr>
<td>COMP SCI 3306 Mining Big Data</td>
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</tr>
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<td>COMP SCI 2204 Advanced Programming Paradigms</td>
</tr>
<tr>
<td>COMP SCI 3005 Parallel and Distributed Computing</td>
<td>COMP SCI 3004 Operating Systems</td>
</tr>
</tbody>
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**NOTES:**

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# BACHELOR OF COMPUTER SCIENCE (Computer Science Major)

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<th>YEAR</th>
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<th>SEMESTER 3</th>
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<tbody>
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<td>COMP SCI 1101 Introduction to Programming - ENG 1002 Programming (Matlab and C) * See note below</td>
<td>COMP SCI 1102 Object Oriented Programming * See note below</td>
<td>COMP SCI Level III Elective</td>
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<tr>
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<td>Level I Elective # or MATHS 1011 Mathematics IA ** Level I Elective #</td>
<td>MATHS 1008 Mathematics for Information Technology I MATHS 1004 Mathematics for Data Science I or MATHS 1012 Mathematics IB ** Level I Elective #</td>
<td>COMP SCI Level III Elective</td>
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<tr>
<td></td>
<td>COMP SCI 2103 Algorithm Design and Data Structures * See note below</td>
<td>COMP SCI 2201 Algorithm &amp; Data Structure Analysis * See note below</td>
<td>COMP SCI 3006 Software Engineering &amp; Project %</td>
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<td>Level II Elective #</td>
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<tr>
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<td>COMP SCI 2207 Web &amp; Database Computing</td>
<td>COMP SCI Level III Elective</td>
<td>COMP SCI 3004 Operating Systems</td>
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<td>COMP SCI 2000 Computer Systems</td>
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FACULTY OF ENGINEERING, COMPUTER AND MATHEMATICAL SCIENCES
PRE-2019 COMMENCER STUDY PLAN

## Computer Science Electives

<table>
<thead>
<tr>
<th>Elective Category</th>
<th>Course 1</th>
<th>Course 2</th>
<th>Course 3</th>
<th>Course 4</th>
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</thead>
<tbody>
<tr>
<td>Puzzle Based Learning</td>
<td>COMP SCI 1012 Scientific Computing</td>
<td>ENG 1002 Programming (Matlab and C)</td>
<td>COMP SCI 1101 Introduction to Programming</td>
<td>ENG 1002 Programming (Matlab and C)</td>
</tr>
<tr>
<td>Problem Solving and Software Development</td>
<td>COMP SCI 2204 Advanced Programming Paradigms</td>
<td>COMP SCI 3001 Computer Networks and Applications</td>
<td>COMP SCI 2005 Systems Programming</td>
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<tr>
<td>Artificial Intelligence</td>
<td>COMP SCI 3012 Distributed Systems</td>
<td>COMP SCI 4411 Event Driven Computing</td>
<td>COMP SCI 3005 Computer Architecture</td>
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<tr>
<td>Parallel and Distributed Computing</td>
<td>COMP SCI 3306 Mining Big Data</td>
<td>COMP SCI 3307 Secure Programming</td>
<td>COMP SCI 3315 Computer Vision</td>
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<tr>
<td>Evolutionary Computation</td>
<td>COMP SCI 3314 Introduction to Statistical Machine Learning</td>
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</tbody>
</table>

### Notes:

**Students with Prior Programming Experience:**
Do not need to complete ENG 1002 Programming (Matlab and C) and can replace it with an Elective. If it is replaced, the following courses must be completed in the order, first COMP SCI 1102, then COMP SCI 2103 and then COMP SCI 2201. However, these courses and COMP SCI 2000 may be completed one semester earlier than shown above.

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**% Students can choose to take one of the following in place of COMP SCI 3006 Software Engineering & Project:**
- COMP SCI 3310 Software Engineering & Project (Artificial Intelligence)
- COMP SCI 3311 Software Engineering & Project (Data Science)
- COMP SCI 3312 Software Engineering & Project (Cybersecurity)
- COMP SCI 3313 Software Engineering & Project (Distributed Systems & Networking)
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<th>Elective Options</th>
<th>Level Elective Options</th>
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<td>COMP SCI 1101 Introduction to Programming, ENG 1002 Programming (Matlab and C)</td>
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<td>MATHS 1008 Mathematics for Information Technology</td>
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<td>Introduction to Statistical Machine Learning</td>
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# BACHELOR OF COMPUTER SCIENCE (Artificial Intelligence Major)

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<th>Year</th>
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<td>Introduction to Programming</td>
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<td>* See note below</td>
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<td>Level I Elective</td>
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<tr>
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<td>S1</td>
<td>COMP SCI 2103</td>
<td>Algorithm Design and Data Structures</td>
<td>Level I Elective</td>
<td>Level II Elective</td>
<td>Level III Elective</td>
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<td>S2</td>
<td>COMP SCI 2201</td>
<td>Algorithm &amp; Data Structure Analysis</td>
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<td>S2</td>
<td>COMP SCI 3310</td>
<td>Software Engineering &amp; Project (Artificial Intelligence)</td>
<td>Level I Elective</td>
<td>Level II Elective</td>
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* Level I Elective options include:
- MATHS 1011 Mathematics IA
- Level I Elective #

* Level II Elective options include:
- COMP SCI 2207 Web & Database Computing
- COMP SCI 2000 Computer Systems

* Level III Elective options include:
- Artificial Intelligence Elective
- COMP SCI Level III Elective

^ Artificial Intelligence Elective
### FACULTY OF ENGINEERING, COMPUTER AND MATHEMATICAL SCIENCES
### PRE-2019 COMMENCER STUDY PLAN

**CHOOSE FROM THE FOLLOWING COMPUTER SCIENCE ELECTIVES**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<th>Course Code</th>
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<td>Puzzle Based Learning</td>
<td>COMP SCI 1012</td>
<td>Scientific Computing</td>
<td>COMP SCI 1101</td>
<td>Introduction to Programming (Matlab and C)</td>
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<td>ENG 1002 Programming (Matlab and C)</td>
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<td>ENG 1002 Programming (Matlab and C)</td>
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<td>COMP SCI 3316</td>
<td>Evolutionary Computation</td>
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</table>

**NOTES:**

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Do not need to complete ENG 1002 Programming (Matlab and C) and can replace it with an Elective. If it is replaced, the following courses must be completed in the order, first COMP SCI 1102, then COMP SCI 2103 and then COMP SCI 2201. However, these courses and COMP SCI 2000 may be completed one semester earlier than shown above.

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% Students can choose to take one of the following in place of COMP SCI 3006 Software Engineering & Project:
- COMP SCI 3310 Software Engineering & Project (Artificial Intelligence)
- COMP SCI 3311 Software Engineering & Project (Data Science)
- COMP SCI 3312 Software Engineering & Project (Cybersecurity)
- COMP SCI 3313 Software Engineering & Project (Distributed Systems & Networking)

^ Artificial Intelligence electives include:
- COMP SCI 3316 Evolutionary Computation
- COMP SCI 3314 Introduction to Statistical Machine Learning
- COMP SCI 3315 Computer Vision
This study plan should be used to guide enrolment for the current academic year. Some students may need to modify their enrolment based on previous study (e.g. students granted advanced standing/credit, students repeating previously failed courses).

### BACHELOR OF COMPUTER SCIENCE (Artificial Intelligence Major) – Semester 2 Start

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<th>YEAR</th>
<th>SEMESTER</th>
<th>COURSE CODE</th>
<th>COURSE NAME</th>
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<td>COMP SCI 1101 Introduction to Programming</td>
<td>ENG 1002 Programming (Matlab and C)</td>
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<td>Level I Elective #</td>
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<td>MATHS 1011 Mathematics IA</td>
<td>Level I Elective #</td>
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<tr>
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<td>S2</td>
<td>COMP SCI 2103 Algorithm Design and Data Structures</td>
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<td>Level I, II or III Elective #</td>
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<td>S1</td>
<td>COMP SCI 2201 Algorithm &amp; Data Structure Analysis</td>
<td>COMP SCI 2207 Web &amp; Database Computing</td>
<td>Level I, II or III Elective #</td>
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<td>Level I, II or III Elective</td>
<td>MATHS 3025 Professional Practice III</td>
<td>Level III Elective #</td>
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<td>or ENTREP 3901 Tech eChallenge</td>
<td>Level III Elective #</td>
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<td>S2</td>
<td>Level II Elective</td>
<td>Artificial Intelligence Elective</td>
<td>Level III Elective #</td>
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<td></td>
<td>or Artificial Intelligence Elective ^</td>
<td>Level III Elective #</td>
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<td>4</td>
<td>S1</td>
<td>COMP SCI Level III Elective</td>
<td>COMP SCI 3007 Artificial Intelligence</td>
<td>Artificial Intelligence Elective ^</td>
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<td></td>
<td>or Artificial Intelligence Elective ^</td>
<td>Level III Elective #</td>
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</table>
### PRE-2019 COMMENCER STUDY PLAN

#### CHOOSE FROM THE FOLLOWING COMPUTER SCIENCE ELECTIVES

| COMP SCI 1010 Puzzle Based Learning | COMP SCI 1012 Scientific Computing ENG 1002 Programming (Matlab and C) | COMP SCI 1101 Introduction to Programming ENG 1002 Programming (Matlab and C) | COMP SCI 2005 Systems Programming |
| COMP SCI 2203 Problem Solving and Software Development | COMP SCI 2204 Advanced Programming Paradigms | COMP SCI 3001 Computer Networks and Applications | COMP SCI 3005 Computer Architecture |
| COMP SCI 3308 Cyber Security Fundamentals | COMP SCI 3012 Distributed Systems | COMP SCI 4411 Event Driven Computing | COMP SCI 3315 Computer Vision |
| COMP SCI 3305 Parallel and Distributed Computing | COMP SCI 3306 Mining Big Data | COMP SCI 3307 Secure Programming | COMP SCI 3314 Introduction to Statistical Machine Learning |
| COMP SCI 3316 Evolutionary Computation | | | |

**NOTES:**

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This study plan should be used to guide enrolment for the current academic year. Some students may need to modify their enrolment based on previous study (e.g. students granted advanced standing/credit, students repeating previously failed courses).

| YEAR 1 | S1 | COMP SCI 1101 Introduction to Programming—ENG 1002 Programming (Matlab and C) * See note below | Level I Elective # or MATHS 1011 Mathematics IA ** | Level I Elective # | Level I Elective # |
| YEAR 2 | S1 | COMP SCI 2103 Algorithm Design and Data Structures | Level II Elective # | COMP SCI 2207 Web & Database Computing | COMP SCI 2000 Computer Systems |
| YEAR 3 | S1 | COMP SCI 3306 Mining Big Data | MATHS 3025 Professional Practice III or ENTREP 3901 Tech eChallenge | Data Science Elective ^ | COMP SCI Level III Elective |
|        | S2 | COMP SCI 3311 Software Engineering & Project (Data Science) | COMP SCI 3314 Introduction to Statistical Machine Learning | COMP SCI 3004 Operating Systems | Level III Elective # |
## Choose from the following Computer Science Electives

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<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
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<tbody>
<tr>
<td>COMP SCI 1010</td>
<td>Puzzle Based Learning</td>
</tr>
<tr>
<td>COMP SCI 1012</td>
<td>Scientific Computing</td>
</tr>
<tr>
<td>ENG 1002</td>
<td>Programming (Matlab and C)</td>
</tr>
<tr>
<td>COMP SCI 1101</td>
<td>Introduction to Programming</td>
</tr>
<tr>
<td>ENG 1002</td>
<td>Programming (Matlab and C)</td>
</tr>
<tr>
<td>COMP SCI 2005</td>
<td>Systems Programming</td>
</tr>
<tr>
<td>COMP SCI 2203</td>
<td>Problem Solving and Software Development</td>
</tr>
<tr>
<td>COMP SCI 2204</td>
<td>Advanced Programming Paradigms</td>
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<td>COMP SCI 3307</td>
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<td>COMP SCI 3314</td>
<td>Introduction to Statistical Machine Learning</td>
</tr>
<tr>
<td>COMP SCI 3316</td>
<td>Evolutionary Computation</td>
</tr>
</tbody>
</table>

### Notes:

**Students with Prior Programming Experience:**
Do not need to complete ENG 1002 Programming (Matlab and C) and can replace it with an Elective. If it is replaced, the following courses must be completed in the order, first COMP SCI 1102, then COMP SCI 2103 and then COMP SCI 2201. However, these courses and COMP SCI 2000 may be completed one semester earlier than shown above.

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^ Data Science electives include:
- COMP SCI 3305 Parallel and Distributed Computing
- STATS 3006 Mathematical Statistics
- STATS 3001 Statistical Modelling III
# BACHELOR OF COMPUTER SCIENCE (Data Science Major) – Semester 2 Start

<table>
<thead>
<tr>
<th>YEAR</th>
<th>SEMESTER</th>
<th>COURSES</th>
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<tbody>
<tr>
<td>1</td>
<td>S2</td>
<td>COMP SCI 1101 Introduction to Programming * ENG 1002 Programming (Matlab and C) * See note below MATHS 1008 Mathematics for Information Technology I MATHS 1004 Mathematics for Data Science I or MATHS 1011 Mathematics IA **</td>
</tr>
<tr>
<td>1</td>
<td>S1</td>
<td>COMP SCI 1102 Object Oriented Programming</td>
</tr>
<tr>
<td></td>
<td>S2</td>
<td>COMP SCI 2103 Algorithm Design and Data Structures</td>
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<tr>
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<td>S1</td>
<td>COMP SCI 2201 Algorithm &amp; Data Structure Analysis</td>
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<td>S2</td>
<td>Level II Elective #</td>
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<td>3</td>
<td>S1</td>
<td>COMP SCI Level III Elective</td>
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# PRE-2019 COMMENCER STUDY PLAN

## CHOOSE FROM THE FOLLOWING COMPUTER SCIENCE ELECTIVES

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<td>Scientific Computing ENG 1002 Programming (Matlab and C)</td>
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<td>Introduction to Programming ENG 1002 Programming (Matlab and C)</td>
</tr>
<tr>
<td>COMP SCI 2203</td>
<td>Problem Solving and Software Development</td>
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<td>COMP SCI 3308</td>
<td>Cyber Security Fundamentals</td>
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- STATS 3006 Mathematical Statistics
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### BACHELOR OF COMPUTER SCIENCE (Cybersecurity Major)

<table>
<thead>
<tr>
<th>Year</th>
<th>Trimester</th>
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<th>Course Title</th>
<th>Level I Elective</th>
<th>Level II Elective</th>
<th>Level III Elective</th>
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<tr>
<td>YEAR 1</td>
<td>S1</td>
<td>COMP SCI 1101</td>
<td>Introduction to Programming</td>
<td>MATHS 1011 Mathematics IA **</td>
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<td>ENG 1002</td>
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<td>S2</td>
<td>COMP SCI 1102</td>
<td>Object Oriented Programming</td>
<td>MATHS 1008 Mathematics for Information Technology I</td>
<td>Level I Elective</td>
<td>COMP SCI 1106 Introduction to Software Engineering</td>
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<td>or MATHS 1012 Mathematics IB **</td>
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<td>YEAR 2</td>
<td>S1</td>
<td>COMP SCI 2103</td>
<td>Algorithm Design and Data Structures</td>
<td>Level II Elective</td>
<td>COMP SCI 2207 Web &amp; Database Computing</td>
<td>COMP SCI 2000 Computer Systems</td>
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<td>S2</td>
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<td>YEAR 3</td>
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<td>COMP SCI 3308</td>
<td>Cybersecurity Fundamentals</td>
<td>MATHS 3025 Professional Practice III or ENTREP 3901 Tech eChallenge</td>
<td>Cybersecurity Elective ^</td>
<td>COMP SCI Level III Elective</td>
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<td>COMP SCI 3312</td>
<td>Software Engineering &amp; Project (Cybersecurity)</td>
<td>COMP SCI 3307 Secure Programming</td>
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### FACULTY OF ENGINEERING, COMPUTER AND MATHEMATICAL SCIENCES

#### PRE-2019 COMMENCEMENT STUDY PLAN

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Electives must include Broadening Electives to the value of 9 units that are not from the following subject areas: COMP SCI, MATHS, PURE MTH, APP MATH, STATS.

**To enrol in MATHS 1012 Mathematics IB students must first pass MATHS 1011 Mathematics IA, this is presented as a level 1 elective. Entry into MATHS 1011 Mathematics IA requires SACE Stage 2 Specialist Mathematics, or a pass in MATHS 1013 Mathematics IM. The Mathematics IA/IB pathway is for students who want to study extra mathematics. A pass in Mathematics IB is prerequisite for all Level II Mathematics courses.**

**Cybersecurity electives include:**

- COMP SCI 3001 Computer Networks and Applications
- MATHS 3026 Cryptography III
This study plan should be used to guide enrolment for the current academic year. Some students may need to modify their enrolment based on previous study (e.g. students granted advanced standing/credit, students repeating previously failed courses).

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**FACULTY OF ENGINEERING, COMPUTER AND MATHEMATICAL SCIENCES**

**PRE-2019 COMMENCER STUDY PLAN**

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**NOTES:**

*STUDENTS WITH PRIOR PROGRAMMING EXPERIENCE:*
Do not need to complete ENG 1002 Programming (Matlab and C) and can replace it with an Elective. If it is replaced, the following courses must be completed in the order, first COMP SCI 1102, then COMP SCI 2103 and then COMP SCI 2201. However, these courses and COMP SCI 2000 may be completed one semester earlier than shown above.

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^ Cybersecurity electives include:
- COMP SCI 3001 Computer Networks and Applications
- MATHS 3026 Cryptography III
# PRE-2019 COMMENCER STUDY PLAN

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## BACHELOR OF COMPUTER SCIENCE (Distributed Systems and Networking Major)

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<td>COMP SCI 1102 Object Oriented Programming</td>
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<td>COMP SCI 1106 Introduction to Software Engineering</td>
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<td>S1</td>
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<td>YEAR 3</td>
<td>S1</td>
<td>COMP SCI 3001 Computer Networks &amp; Applications</td>
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# PRE-2019 COMMENCER STUDY PLAN

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<td>Scientific Computing</td>
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<td>COMP SCI 1101</td>
<td>Introduction to Programming</td>
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<td>ENG 1002</td>
<td>Programming (Matlab and C)</td>
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<td>COMP SCI 2005</td>
<td>Systems Programming</td>
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<td>COMP SCI 2203</td>
<td>Problem Solving and Software Development</td>
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<td>Advanced Programming Paradigms</td>
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<td>COMP SCI 3314</td>
<td>Introduction to Statistical Machine Learning</td>
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<td>COMP SCI 3315</td>
<td>Computer Vision</td>
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<td>COMP SCI 3308</td>
<td>Cyber Security Fundamentals</td>
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<td>COMP SCI 3306</td>
<td>Mining Big Data</td>
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^ **Distributed Systems & Networking electives include:**
- COMP SCI 3305 Parallel and Distributed Computing
# BACHELOR OF COMPUTER SCIENCE (Distributed Systems & Networking Major) – Semester 2 Start

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# PRE-2019 COMMENCER STUDY PLAN

## FACULTY OF ENGINEERING, COMPUTER AND MATHEMATICAL SCIENCES

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<td><strong>COMP SCI 1012</strong> Scientific Computing, <strong>ENG 1002</strong> Programming (Matlab and C)</td>
<td><strong>COMP SCI 1101</strong> Introduction to Programming, <strong>ENG 1002</strong> Programming (Matlab and C)</td>
<td><strong>COMP SCI 2005</strong> Systems Programming</td>
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<tr>
<td><strong>COMP SCI 2203</strong> Problem Solving and Software Development</td>
<td><strong>COMP SCI 2204</strong> Advanced Programming Paradigms</td>
<td><strong>COMP SCI 3001</strong> Computer Networks and Applications</td>
<td><strong>COMP SCI 3005</strong> Computer Architecture</td>
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<td><strong>COMP SCI 3007</strong> Artificial Intelligence</td>
<td><strong>COMP SCI 3012</strong> Distributed Systems</td>
<td><strong>COMP SCI 4411</strong> Event Driven Computing</td>
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<td><strong>COMP SCI 3305</strong> Parallel and Distributed Computing</td>
<td><strong>COMP SCI 3306</strong> Mining Big Data</td>
<td><strong>COMP SCI 3307</strong> Secure Programming</td>
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<td><strong>COMP SCI 3314</strong> Introduction to Statistical Machine Learning</td>
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  Do not need to complete **ENG 1002 Programming** (Matlab and C) and can replace it with an Elective. If it is replaced, the following courses must be completed in the order, first **COMP SCI 1102**, then **COMP SCI 2103** and then **COMP SCI 2201**. However, these courses and **COMP SCI 2000** may be completed one semester earlier than shown above.

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- **Distributed Systems & Networking electives include:**
  - **COMP SCI 3305** Parallel and Distributed Computing
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<td>COMP SCI 3004</td>
<td>Operating Systems</td>
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**NOTES:**

*STUDENTS WITH PRIOR PROGRAMMING EXPERIENCE:*

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## BACHELOR OF COMPUTER SCIENCE (ADVANCED) – Semester 2 Start

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<tr>
<th>YEAR 1</th>
<th>S 2</th>
<th>COMP SCI 1101 Introduction to Programming – ENG 1002 Programming (Matlab and C)</th>
<th>MATHS 1008 Mathematics for Information Technology I MATHS 1004 Mathematics for Data Science I or MATHS 1011 Mathematics IA **</th>
<th>COMP SCI 1104 Grand Challenges in Computer Science</th>
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<td>COMP SCI 1102 Object Oriented Programming</td>
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<td>Programming (Matlab and C)</td>
</tr>
<tr>
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<td>Introduction to Programming</td>
</tr>
<tr>
<td>COMP SCI 2005</td>
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<tr>
<td>COMP SCI 3005</td>
<td>Computer Architecture</td>
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<td>COMP SCI 3007</td>
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<tr>
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<tr>
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<td>Cybersecurity Fundamentals</td>
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<tr>
<td>COMP SCI 3309</td>
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</tr>
<tr>
<td>COMP SCI 3310</td>
<td>Computer Networks and Applications</td>
</tr>
<tr>
<td>COMP SCI 4411</td>
<td>Event Driven Computing</td>
</tr>
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<td>COMP SCI 3012</td>
<td>Distributed Systems</td>
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<tr>
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FACULTY OF ENGINEERING, COMPUTER AND MATHEMATICAL SCIENCES
PRE-2019 COMMENCER STUDY PLAN

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<td>S1</td>
<td>S2</td>
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<td>COMP SCI 2201 Algorithm &amp; Data Structure Analysis</td>
<td>Level I, II or III Elective #</td>
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<tr>
<td>YEAR 2</td>
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<tr>
<td>S1</td>
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## Pre-2019 Commencer Study Plan

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<td></td>
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<td>Systems Programming</td>
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<td>Computer Networks and Applications</td>
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<td>COMP SCI 3012</td>
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<td>COMP SCI 3006</td>
<td>Mining Big Data</td>
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<td>Mining Big Data</td>
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<td>COMP SCI 3307</td>
<td>Secure Programming</td>
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<td>Cyber Security Fundamentals</td>
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<td>Evolutionary Computation</td>
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<td>Software Engineering &amp; Project</td>
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<td><strong>COMP SCI 3310 Software Engineering &amp; Project</strong></td>
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<td><strong>COMP SCI 3311 Software Engineering &amp; Project</strong></td>
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<td><strong>COMP SCI 3312 Software Engineering &amp; Project</strong></td>
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<td>(Distributed Systems and Networking)</td>
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</table>

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**Can choose to take one of the following in place of COMP SCI 3006 Software Engineering & Project:**

- COMP SCI 3310 Software Engineering & Project (Artificial Intelligence)
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<tr>
<th>Year</th>
<th>Semester</th>
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<th>Course Code</th>
<th>Credits</th>
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<td>COMP SCI 1104 Grand Challenges in Computer Science</td>
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# FACULTY OF ENGINEERING, COMPUTER AND MATHEMATICAL SCIENCES
## PRE-2019 COMMENCER STUDY PLAN

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FACULTY OF ENGINEERING, COMPUTER AND MATHEMATICAL SCIENCES
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BACHELOR OF COMPUTER SCIENCE (ADVANCED) (Artificial Intelligence Major)

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<td>or MATHS 104 Mathematics for Data Science I</td>
<td>or MATHS 1012 Mathematics IB</td>
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<td>S2</td>
<td>COMP SCI 1102 Object Oriented Programming</td>
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<td>COMP SCI 2103 Algorithm Design and Data Structures</td>
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<td>COMP SCI 2000 Computer Systems</td>
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<td>S2</td>
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<td>Level II Elective</td>
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<td>COMP SCI 3310 Software Engineering &amp; Project (Artificial Intelligence)</td>
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Note: Courses marked with ^ are Artificial Intelligence electives. Level I, II or III Elective options are available for students to choose from.


## CHOOSE FROM THE FOLLOWING COMPUTER SCIENCE ELECTIVES

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<th>Course Name</th>
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| BACHELOR OF COMPUTER SCIENCE (ADVANCED) (Artificial Intelligence Major) – Semester 2 Start |
|-----------------------------------------------|------------------------------------------------|-------------------------------------------------|-----------------------------------------------|
| **YEAR 1**                                   | **S2**                                        | **S2**                                         | **S2**                                        |
| COMP SCI 1101 Introduction to Programming     | ENG 1002 Programming (Matlab and C)           | MATHS 1008 Mathematics for Information Technology I |
| * See note below                              |                                               | MATHS 1004 Mathematics for Data Science I       | COMP SCI 1104 Grand Challenges in Computer Science |
|                                               |                                               | or MATHS 1011 Mathematics IA **                 |                                               |
|                                               |                                               |                                               |                                               |
| **YEAR 2**                                   | **S1**                                        | **S1**                                         | **S2**                                        |
| COMP SCI 1102 Object Oriented Programming     |                                               | Level I Elective #                            |                                               |
|                                               |                                               | or MATHS 1012 Mathematics I B **                |                                               |
|                                               |                                               |                                               |                                               |
| COMP SCI 2103 Algorithm Design and Data Structures | Level I Elective #                             |                                               |                                               |
|                                               |                                               |                                               |                                               |
| **YEAR 3**                                   | **S1**                                        | **S1**                                         | **S2**                                        |
| COMP SCI 2201 Algorithm & Data Structure Analysis | MATHS 3025 Professional Practice III       |                                               |                                               |
|                                               |                                               | or ENTREP 3901 Tech eChallenge                |                                               |
|                                               |                                               |                                               |                                               |
| Level I, II or III Elective #                 | Artificial Intelligence Elective ^             |                                               |                                               |
|                                               |                                               |                                               |                                               |
| **YEAR 4**                                   | **S1**                                        | **S1**                                         |                                               |
| Artificial Intelligence Elective ^            | COMP SCI 3007 Artificial Intelligence         |                                               |                                               |
|                                               |                                               |                                               |                                               |
|                                               |                                               |                                               |                                               |
|                                               |                                               |                                               |                                               |
## Pre-2019 Commencer Study Plan

### Choose from the Following Computer Science Electives

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### Notes:

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<td>S1</td>
<td>COMP SCI 1101 Introduction to Programming—ENG 1002 Programming (Matlab and C)</td>
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<td>S2</td>
<td>COMP SCI 1102 Object Oriented Programming</td>
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<tr>
<th>YEAR 2</th>
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<th>Level II Elective #</th>
<th>COMP SCI 2008 Topics in Computer Science (6 units)</th>
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<tr>
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<td>COMP SCI 2103 Algorithm Design and Data Structures</td>
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<th>Data Science Elective ^</th>
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<td>S1</td>
<td>COMP SCI 3306 Mining Big Data</td>
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<td>COMP SCI 3002 Advanced Topics in Computer Science (6 units)</td>
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## FACULTY OF ENGINEERING, COMPUTER AND MATHEMATICAL SCIENCES
### PRE-2019 COMMENCER STUDY PLAN

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- STATS 3006 Mathematical Statistics
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### BACHELOR OF COMPUTER SCIENCE (ADVANCED) (Data Science Major) – Semester 2 Start

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<tr>
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<th>S2</th>
<th>COMP SCI 1101 Introduction to Programming <strong>ENG 1002 Programming (Matlab and C)</strong> * See note below</th>
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**Level I Elective #**

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**Note:**

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**ENTREP 3901 Tech eChallenge**

**COMP SCI 3312 Secure Programming**

**COMP SCI 3307 Operating Systems**

**COMP SCI 3004 Operating Systems**

**ENTREP 3901 Tech eChallenge**

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**FACULTY OF ENGINEERING, COMPUTER AND MATHEMATICAL SCIENCES**

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**Cybersecurity electives include:**
- COMP SCI 3001 Computer Networks and Applications
- MATHS 3026 Cryptography III
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<thead>
<tr>
<th>YEAR</th>
<th>SEMESTER</th>
<th>COURSE CODE</th>
<th>COURSE NAME</th>
<th>COMP SCI 1101 Introduction to Programming <strong>ENG 1002 Programming (Matlab and C)</strong> * See note below</th>
<th>MATHS 1008 Mathematics for Information Technology I</th>
<th>MATHS 1004 Mathematics for Data Science I or MATHS 1011 Mathematics IA **</th>
<th>COMP SCI 1104 Grand Challenges in Computer Science</th>
<th>COMP SCI 1106 Introduction to Software Engineering</th>
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<tr>
<td>YEAR 1</td>
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<td>COMP SCI 1101 Introduction to Programming <strong>ENG 1002 Programming (Matlab and C)</strong> * See note below</td>
<td>MATHS 1008 Mathematics for Information Technology I</td>
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<td>Level I Elective #</td>
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<td>S2</td>
<td>COMP SCI 2103 Algorithm Design and Data Structures</td>
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<td>COMP SCI 2201 Algorithm &amp; Data Structure Analysis</td>
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<td>COMP SCI 2008 Topics in Computer Science (6 units)</td>
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<td>Level I, II or III Elective #</td>
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<td>Scientific Computing ENG 1002 Programming (Matlab and C)</td>
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<td>Introduction to Programming ENG 1002 Programming (Matlab and C)</td>
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<td>Introduction to Programming ENG 1002 Programming (Matlab and C)</td>
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<td>Problem Solving and Software Development</td>
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<td>Computer Vision</td>
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<td>COMP SCI 3316</td>
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### NOTES:

*STUDENTS WITH PRIOR PROGRAMMING EXPERIENCE:
Do not need to complete ENG 1002 Programming (Matlab and C) and can replace it with an Elective. If it is replaced, the following courses must be completed in the order, first COMP SCI 1102, then COMP SCI 2103 and then COMP SCI 2201. However, these courses and COMP SCI 2000 may be completed one semester earlier than shown above.

** Electives may be any University of Adelaide Undergraduate course for which the student meets the pre-requisites. Please check the availability, restriction and incompatible section on the course planner for elective choices.
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- MATHS 3026 Cryptography III
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### BACHELOR OF COMPUTER SCIENCE (ADVANCED) (Distributed Systems & Networking Major)

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<td>COMP SCI 1102</td>
<td>Object Oriented Programming</td>
<td>MATHS 1008 Mathematics for Information Technology I</td>
<td>COMP SCI 1104 Grand Challenges in Computer Science</td>
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<td>or MATHS 1011 Mathematics IA **</td>
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<td>COMP SCI 2103</td>
<td>Algorithm Design and Data Structures</td>
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<td>COMP SCI 2005 Systems Programming</td>
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<td>COMP SCI 3316 Evolutionary Computation</td>
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<tr>
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<td>MATHS 1004 Mathematics for Data Science I or MATHS 1011 Mathematics IA **</td>
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<td>COMP SCI 1104 Grand Challenges in Computer Science</td>
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<td>COMP SCI 1106 Introduction to Software Engineering</td>
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<td>2</td>
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## PRE-2019 COMMENCER STUDY PLAN

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<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Year 1</th>
<th>Year 2</th>
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<tr>
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**HONOURS DEGREE OF BACHELOR OF COMPUTER SCIENCE – Semester 2 Start**

<table>
<thead>
<tr>
<th>Year 1</th>
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</thead>
<tbody>
<tr>
<td>S1</td>
<td>S2</td>
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**CHOOSE FROM THE FOLLOWING ELECTIVES**

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<th>Semester</th>
<th>Course Code</th>
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<th>Units</th>
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<tr>
<td>S1</td>
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<td>Software Process Improvement - Honours</td>
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<td>COMP SCI 4195 Evol. Comput. - Honours</td>
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<td>S2</td>
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</table>
# FACULTY OF ENGINEERING, COMPUTER AND MATHEMATICAL SCIENCES
## PRE-2019 COMMENCER STUDY PLAN

This study plan should be used to guide enrolment for the current academic year. Some students may need to modify their enrolment based on previous study (e.g. students granted advanced standing/credit, students repeating previously failed courses).

<table>
<thead>
<tr>
<th>YEAR</th>
<th>SEMESTER</th>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
<th>COURSE CODE</th>
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<tbody>
<tr>
<td>1</td>
<td>S 1</td>
<td>COMP SCI 1101</td>
<td>Introduction to Programming</td>
<td>ELEC ENG 1100</td>
<td>Analog Electronics</td>
<td>MATHS 1011</td>
<td>Mathematics IA #</td>
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<td>S 2</td>
<td>COMP SCI 1102</td>
<td>Object Oriented Programming</td>
<td>COMP SCI 1106</td>
<td>Introduction to Software Engineering</td>
<td>MATHS 1012</td>
<td>Mathematics IB #</td>
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<td>ELEC ENG 1100</td>
<td>Analog Electronics</td>
<td>COMP SCI 1106</td>
<td>Introduction to Software Engineering</td>
<td>MATHS 1012</td>
<td>Mathematics IB #</td>
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<td>Mathematics IA</td>
<td>ELEC ENG 1102</td>
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<td>STATS 1000</td>
<td>Statistical Practice I</td>
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<td>COMP SCI 2103</td>
<td>Algorithm Design &amp; Data Structures</td>
<td>COMP SCI 2005</td>
<td>Systems Programming</td>
<td>COMP SCI 2207</td>
<td>Web and Database Computing</td>
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<td>S 2</td>
<td>COMP SCI 2201</td>
<td>Algorithm &amp; Data Structure Analysis</td>
<td>COMP SCI 2000</td>
<td>Computer Systems</td>
<td>COMP SCI 2203</td>
<td>Problem Solving &amp; Software Development</td>
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<td>COMP SCI 2201</td>
<td>Algorithm &amp; Data Structure Analysis</td>
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<td>COMP SCI 2203</td>
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<td>COMP SCI 2207</td>
<td>Web and Database Computing</td>
<td>COMP SCI 2203</td>
<td>Problem Solving &amp; Software Development</td>
<td>COMP SCI 2205</td>
<td>Software Engineering Workshop I</td>
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<td>COMP SCI 2206</td>
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<td>COMP SCI 3001</td>
<td>Computer Networks &amp; Applications</td>
<td>Level III Elective</td>
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<td>COMP SCI 3303</td>
<td>Engineering Software as Services I</td>
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<td>S 2</td>
<td>COMP SCI 3004</td>
<td>Operating Systems</td>
<td>COMP SCI 3013</td>
<td>Event Driven Computing</td>
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<td>COMP SCI 4414A</td>
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<td>COMP SCI 4023</td>
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<td>ELEC ENG 4100</td>
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<td>COMP SCI 4023</td>
<td>Software Process Improvement</td>
<td>C&amp;ENV ENG 4034</td>
<td>Engineering Management IV</td>
</tr>
</tbody>
</table>
NOTES:

*STUDENTS WITH PRIOR PROGRAMMING EXPERIENCE:
Do not need to complete ENG 1002 Programming (Matlab and C) and can replace it with an Elective. If it is replaced, the following courses must be completed in the order, first COMP SCI 1102, then COMP SCI 2103 and then COMP SCI 2201. However, these courses and COMP SCI 2000 may be completed one semester earlier than shown above.

Electives may be any University of Adelaide Undergraduate course for which the student meets the pre-requisites. Please check the availability, restriction and incompatible section on the course planner for elective choices.

How to choose an elective course in your area of interest? Please refer to the steps via the link: https://ecms.adelaide.edu.au/study-with-us/student-support/enrolment

# To enrol in MATHS 1012 Mathematics IB students must first pass MATHS 1011 Mathematics IA, this is presented as a level 1 elective. Entry into MATHS 1011 Mathematics IA requires SACE Stage 2 Specialist Mathematics, or a pass in MATHS 1013 Mathematics IM. The Mathematics IA/IB pathway is for students who want to study extra mathematics. A pass in Mathematics IB is prerequisite for all Level II Mathematics courses.

Administrative note only:
**International students present ENG 3003 Engineering Communication EAL in lieu of a Level III Elective
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<table>
<thead>
<tr>
<th>YEAR 1</th>
<th>Semester 2 Start</th>
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<tr>
<td></td>
<td>COMP SCI 1101 Introduction to Programming</td>
<td>COMP SCI 1106 Introduction to Software Engineering</td>
<td>MATHS 1011 Mathematics IA</td>
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<td>ELEC ENG 1102 Digital Electronics</td>
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<td>ENG 1002 Programming (Matlab and C)</td>
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<td>S 1</td>
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<td>COMP SCI 2205 Software Engineering Workshop I</td>
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<td>COMP SCI 2103 Algorithm Design &amp; Data Structures</td>
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<td>COMP SCI 3001 Computer Networks &amp; Applications</td>
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