## Appendix 1a - Mandatory Module and Examination Plan for World Track

### Computer Science – World Track

Matriculation Fall 2018

<table>
<thead>
<tr>
<th>Program-Specific Modules</th>
<th>Type</th>
<th>Status¹</th>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH08-GenCS Module: General Computer Science</td>
<td>m</td>
<td>15</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Jacobs Track Modules (General Education)</th>
<th>Type</th>
<th>Status¹</th>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>JT-ME-MethodsMath Module: Methods / Mathematics</td>
<td>m</td>
<td>7.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JT-ME-120103 Calculus I</td>
<td>Lecture</td>
<td>m</td>
<td>1</td>
<td>2.5</td>
</tr>
<tr>
<td>JT-ME-120104 Calculus II</td>
<td>Lecture</td>
<td>m</td>
<td>1</td>
<td>2.5</td>
</tr>
<tr>
<td>JT-ME-120122 Foundations of Linear Algebra I</td>
<td>Lecture</td>
<td>m</td>
<td>2</td>
<td>2.5</td>
</tr>
</tbody>
</table>

#### Year 1 - CHOICE

Take the mandatory CHOICE module listed below, this is a requirement for the CS program.

- **CH08-320101 Introduction to Computer Science**
  - Lecture: m 1 5
- **CH08-320142 Programming in C++ I**
  - Lab: m 2 2.5

<table>
<thead>
<tr>
<th>Module: CHOICE (own selection)</th>
<th>Type</th>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>JT-SK-Skills Module: Skills</td>
<td>m</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>JT-SK-320111 Programming in C I</td>
<td>Lecture</td>
<td>m</td>
<td>1</td>
</tr>
<tr>
<td>JT-SK-320112 Programming in C II</td>
<td>Lecture</td>
<td>m</td>
<td>2</td>
</tr>
</tbody>
</table>

#### Year 2 - CORE

Take all three modules or replace one with a CORE module from a different study program.

<table>
<thead>
<tr>
<th>Module: Applied Computer Science</th>
<th>Type</th>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO19-320302 Databases and Web Services</td>
<td>Lecture</td>
<td>m 3</td>
<td>5</td>
</tr>
<tr>
<td>CO19-320322 Computer Graphics</td>
<td>Lecture</td>
<td>m 3</td>
<td>5</td>
</tr>
<tr>
<td>CO19-320212 Software Engineering</td>
<td>Lecture</td>
<td>m 4</td>
<td>5</td>
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<table>
<thead>
<tr>
<th>Module: Technical Computer Science</th>
<th>Type</th>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO20-320202 Operating Systems</td>
<td>Lecture</td>
<td>m 3</td>
<td>5</td>
</tr>
<tr>
<td>CO20-320241 Computer Architecture and Programming Languages</td>
<td>Lecture</td>
<td>m 3</td>
<td>5</td>
</tr>
<tr>
<td>CO20-320301 Computer Networks</td>
<td>Lecture</td>
<td>m 4</td>
<td>5</td>
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</table>

<table>
<thead>
<tr>
<th>Module: THEORETICAL COMPUTER SCIENCE</th>
<th>Type</th>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO21-320211 Formal Languages and Logic</td>
<td>Lecture</td>
<td>m 3</td>
<td>5</td>
</tr>
<tr>
<td>CO21-320203 Secure and Dependable Systems</td>
<td>Lecture</td>
<td>m 4</td>
<td>5</td>
</tr>
<tr>
<td>CO21-320352 Computability and Complexity</td>
<td>Lecture</td>
<td>m 4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Module: Internship / Study Abroad</th>
<th>Type</th>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA02 / CA03 Module: Internship / Study Abroad</td>
<td>m</td>
<td>5</td>
<td>20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Module: Project/Thesis CS</th>
<th>Type</th>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA10-CS Module: Project/Thesis CS</td>
<td>m</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>CA10-320305 Project CS</td>
<td>m 6</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>CA10-320306 Thesis CS</td>
<td>m 6</td>
<td>10</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Module: SPECIALIZATION AREA CS</th>
<th>Type</th>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA-S-CS Module: Specialization Area CS</td>
<td>m</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Take 10 ECTS of specialization courses</td>
<td>me</td>
<td>5/6</td>
<td>10</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Module: Methods / Mathematics</th>
<th>Type</th>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>JT-ME-120103 Calculus I</td>
<td>Lecture</td>
<td>m</td>
<td>1</td>
</tr>
<tr>
<td>JT-ME-120104 Calculus II</td>
<td>Lecture</td>
<td>m</td>
<td>1</td>
</tr>
<tr>
<td>JT-ME-120122 Foundations of Linear Algebra I</td>
<td>Lecture</td>
<td>m</td>
<td>2</td>
</tr>
</tbody>
</table>

#### Year 3 - CAREER

<table>
<thead>
<tr>
<th>Module: Internship / Study Abroad</th>
<th>Type</th>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA02 / CA03 Module: Internship / Study Abroad</td>
<td>m</td>
<td>5</td>
<td>20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Module: Internship / Project/Thesis CS</th>
<th>Type</th>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA01-CS Module: Internship / Project/Thesis CS</td>
<td>m</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>CA01-320305 Project CS</td>
<td>m 6</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Module: Career Advising</th>
<th>Type</th>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA01-CarAdv Career Advising</td>
<td>m</td>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Module: Methods / Mathematics</th>
<th>Type</th>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>JT-ME-120103 Calculus I</td>
<td>Lecture</td>
<td>m</td>
<td>1</td>
</tr>
<tr>
<td>JT-ME-120104 Calculus II</td>
<td>Lecture</td>
<td>m</td>
<td>1</td>
</tr>
</tbody>
</table>

#### Total ECTS

1 Status (m = mandatory, e = elective, me = mandatory elective)² For a full listing of all CHOICE / CORE / CAREER / Jacobs Track modules please consult the CampusNet online catalogue and / or the module handbook (on our website).

2 You are required to take six Triangle Area courses in total. Select two from each of the three triangle areas (BUSINESS, TECHNOLOGY & INNOVATION, SOCIETAL CONTEXT).

3 Mandatory component of the Jacobs University's Counseling and Advising Scheme.

4 CS students may also take the Programming in Python skills courses, but the received credits will not count towards the 180 ECTS credits required by the major nor do they count for the GPA.

V1. 07/2018
## Computer Science – Campus Track

### Year 1 - CHOICE

Take the mandatory CHOICE module listed below, this is a requirement for the CS program.

<table>
<thead>
<tr>
<th>Program-Specific Modules</th>
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<th>Status¹</th>
<th>Semester Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH08-GenCS Module: General Computer Science</td>
<td>m</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>CH08-320101 Introduction to Computer Science</td>
<td>Lecture</td>
<td>m</td>
<td>1</td>
</tr>
<tr>
<td>CH08-320142 Programming in C++ I</td>
<td>Lab</td>
<td>m</td>
<td>1</td>
</tr>
<tr>
<td>CH08-320201 Algorithms and Data Structures</td>
<td>Lecture</td>
<td>m</td>
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</tr>
<tr>
<td>CH08-320143 Programming in C++ II</td>
<td>Lab</td>
<td>m</td>
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### Module: CHOICE (own selection)

<table>
<thead>
<tr>
<th></th>
<th>Type</th>
<th>Status¹</th>
<th>Semester Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH08-320101</td>
<td>e</td>
<td>1/2</td>
<td>30</td>
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</tbody>
</table>

Students take two further CHOICE modules from those offered for all other study programs.³

### Year 2 - CORE

Take all three modules or replace one with a CORE module from a different study program.²

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<tbody>
<tr>
<td>CO19-AppCS Module: Applied Computer Science</td>
<td>me</td>
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<td>Lecture</td>
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<td>Lecture</td>
<td>m</td>
<td>4</td>
</tr>
<tr>
<td>CO21-TheoCS Module: Theoretical Computer Science</td>
<td>me</td>
<td>15</td>
<td></td>
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### Year 3 - CAREER

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</tr>
<tr>
<td>CA10-320305 Project CS</td>
<td>Lecture</td>
<td>m</td>
<td>5</td>
</tr>
<tr>
<td>CA10-320036 Thesis CS</td>
<td>Lecture</td>
<td>m</td>
<td>6</td>
</tr>
<tr>
<td>CA-S-CS Module: Specialization Area CS</td>
<td>m</td>
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<td></td>
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</table>

Take 15 ECTS of specialization courses³

### Jacobs Track Modules (General Education)

<table>
<thead>
<tr>
<th>Program-Specific Modules</th>
<th>Type</th>
<th>Status¹</th>
<th>Semester Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>JT-ME-MethodsMath Module: Methods / Mathematics</td>
<td>Lecture</td>
<td>m</td>
<td>1</td>
</tr>
<tr>
<td>JT-ME-120103 Calculus I</td>
<td>Lecture</td>
<td>m</td>
<td>1</td>
</tr>
<tr>
<td>JT-ME-120104 Calculus II</td>
<td>Lecture</td>
<td>m</td>
<td>1</td>
</tr>
<tr>
<td>JT-ME-120122 Foundations of Linear Algebra I</td>
<td>Lecture</td>
<td>m</td>
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</tr>
<tr>
<td>JT-SK-Skills Module: Skills</td>
<td>m</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>JT-SK-320111 Programming in C I</td>
<td>Lecture</td>
<td>m</td>
<td>1</td>
</tr>
<tr>
<td>JT-SK-320112 Programming in C II</td>
<td>Lecture</td>
<td>m</td>
<td>2</td>
</tr>
<tr>
<td>JT-TA-TriArea Module: Triangle Area</td>
<td>m</td>
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<td></td>
</tr>
<tr>
<td>JT-LA-Language Module: Language</td>
<td>m</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>JT-LA-320111 Programming in Python</td>
<td>Lecture</td>
<td>m</td>
<td>1</td>
</tr>
<tr>
<td>JT-LA-320112 Programming in Python</td>
<td>Lecture</td>
<td>m</td>
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</tr>
<tr>
<td>JT-LA-320122 Programming in Python</td>
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<td>m</td>
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<tr>
<td>JT-LA-320123 Programming in Python</td>
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<td>JT-LA-320124 Programming in Python</td>
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<tr>
<td>JT-LA-320125 Programming in Python</td>
<td>Lecture</td>
<td>m</td>
<td>2</td>
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</tbody>
</table>

### Total Credits

Total ECTS: 180

¹ Status (m = mandatory, e = elective, me = mandatory elective)
² For a full listing of all CHOICE / CORE / CAREER / Jacobs Track modules please consult the CampusNet online catalogue and/or the module handbook (on our website).
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