Electrotechnology
Certificate II in Electrotechnology (Career Start) (UEE22011)

based on the Electrotechnology Training Package (UEE11) version 1.3

<table>
<thead>
<tr>
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<th>2013</th>
</tr>
</thead>
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</tbody>
</table>
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Introduction to the Electrotechnology Curriculum Framework

The Electrotechnology Curriculum Framework is a Board Developed HSC syllabus. It is based on qualifications and units of competency contained in the nationally endorsed Electrotechnology Training Package (UEE11) and includes pathways to:

- Certificate II in Electrotechnology (Career Start) (UEE22011)
- Certificate II in Computer Assembly and Repair (UEE20511)
- Certificate II in Data and Voice Communications (UEE20711)
- Certificate II in Technical Support (UEE21711)
- Certificate II in Sustainable Energy (Career Start) (UEE22111)
- Certificate III in Data and Voice Communications (UEE30411) (Statement of Attainment only)
- Certificate III in Electrotechnology Electrician (UEE30811) (Statement of Attainment only)
- Certificate III in Electrical Fitting (UEE33011) (Statement of Attainment only).

The Electrotechnology Curriculum Framework contains the following HSC VET courses (detailed in Section 2 of the Syllabus):

- Electrotechnology (120 indicative hours)
- Electrotechnology (240 indicative hours)
- Electrotechnology Specialisation Study (60 or 120 indicative hours).

HSC VET courses are dual accredited. Students can gain credit towards:

- the NSW Higher School Certificate (HSC)
- an AQF VET qualification – eg Certificate II in Electrotechnology (Career Start).
As a result of the dual accreditation, HSC VET courses are governed by two sets of rules:

- HSC unit credit requirements determined by:
  - HSC course requirements (detailed in Section 2 of the Syllabus)
  - the requirements for satisfactory course completion – outlined on the Board of Studies Assessment Certification Examination (ACE) website
- AQF VET qualification requirements specified in:
  - the qualification packaging rules for Certificate II in Electrotechnology (Career Start)
    – defined in the Electrotechnology Training Package
  - Registered Training Organisation (RTO) policies.

It is important to note that the rules and structure of HSC VET courses are not identical to the qualification packaging rules.

RTOs offering training programs for the delivery and assessment of the Electrotechnology HSC VET courses must meet the requirements of the VET Quality Framework, the Electrotechnology Training Package (UEE11) and the HSC course.

The Electrotechnology Curriculum Framework and Certificate II in Electrotechnology (Career Start)

The Electrotechnology Training Package qualification packaging rules for Certificate II in Electrotechnology (Career Start) (UEE22011) require the achievement of:

- 6 core units of competency (220 points)
- plus elective units of competency totalling 140 points:
  - maximum 60 points from Group A
  - minimum 80 points from Group B.

To achieve Certificate II in Electrotechnology (Career Start) (UEE22011) as part of the HSC, students will generally complete the following HSC VET course from the Electrotechnology Curriculum Framework:

- Electrotechnology (240 indicative hours) – 4 HSC credit units.

To be eligible for the award of the HSC, students must satisfactorily complete a pattern of study that includes 22 HSC credit units (refer to the Assessment Certification Examination (ACE) website for further details).
Electrotechnology HSC course requirements for Certificate II in Electrotechnology (Career Start)

Refer to [Section 2 of the Syllabus](#) and [qualification packaging rules](#) for further details.

<table>
<thead>
<tr>
<th>HSC course requirements</th>
<th>AQF VET qualification requirements</th>
</tr>
</thead>
</table>
| **Electrotechnology**  
(240 indicative hours)   | **Certificate II in Electrotechnology**  
(Career Start) |
| Students must undertake: | Students must achieve six core units of competency, plus elective units of competency totalling 140 points |
| seven mandatory units of competency  
(175 HSC indicative hours) | made up of four core, one Group A elective (40 points) and two Group B electives (60 points) |
| HSC Content  
(six focus areas) | |
| HSC elective units of competency  
to a minimum of  
65 HSC indicative hours  
(from the HSC elective pool) | to be able to achieve Certificate II in Electrotechnology (Career Start)  
the remaining units of competency need to include:  
the remaining two core units of competency for the qualification  
+ elective units of competency (40 points) for the qualification  
(maximum 20 points from Group A, minimum 20 points from Group B) |
| minimum of 70 hours of mandatory work placement | |

### Work placement

Work placement is a mandatory HSC VET course requirement with minimum hours assigned to each HSC VET course. Non-completion of work placement means the student has not met the HSC VET course requirements and cannot count the HSC credit units for the course towards the award of their HSC. They would still be credentialled for the AQF VET qualification outcome.

The minimum work placement requirement for students undertaking *Certificate II in Electrotechnology (Career Start) (UEE22011)* through the 240 indicative hours course is 70 hours.

Work placement is to be undertaken in an appropriate electrotechnology work environment.

Students undertaking these courses as part of a school-based apprenticeship or traineeship will meet the mandatory work placement hour requirements through the on-the-job training component of the apprenticeship or traineeship.
Recognition of Prior Learning (RPL) may be granted for mandatory work placement requirements. Students’ outside employment (ie not under the auspices of the school) may be recognised towards the requirement for work placement in a VET course (ACE 8051 – Assessment Certification Examination (ACE) website).

Refer to the Work Placement in Electrotechnology document for further information.

HSC Content

The HSC Content for this industry curriculum framework is organised into focus areas. Each focus area prescribes the scope of learning for the HSC. This is drawn from the associated units of competency (outlined in Table 1 below).

Students undertaking the Electrotechnology (240 indicative hours) course must address all of the mandatory focus areas:
- Components, tools and equipment
- Direct current circuits
- Drawings, diagrams and compliance
- Safety
- Sustainability
- Working in the industry.

The content description for each focus area is detailed in Section 3 of the Syllabus.

The HSC examination in Electrotechnology is based on the HSC Content and employability skills for the Certificate II qualifications in this Framework (refer to Section 4 of the Syllabus).

Table 1 Focus areas and associated units of competency for Certificate II in Electrotechnology (Career Start)

<table>
<thead>
<tr>
<th>Focus area</th>
<th>Unit code</th>
<th>Unit title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Components, tools and equipment</td>
<td>UEEENEE102A</td>
<td>Fabricate, assemble and dismantle utilities industry components</td>
</tr>
<tr>
<td></td>
<td>UEEENEE105A</td>
<td>Fix and secure electrotechnology equipment</td>
</tr>
<tr>
<td>Direct current circuits</td>
<td>UEEENEE104A</td>
<td>Solve problems in d.c. circuits</td>
</tr>
<tr>
<td>Drawings, diagrams and compliance</td>
<td>UEEENEE107A</td>
<td>Use drawings, diagrams, schedules, standards, codes and specifications</td>
</tr>
<tr>
<td>Safety</td>
<td>UEEENEE101A</td>
<td>Apply Occupational Health and Safety regulations, codes and practices in the workplace</td>
</tr>
<tr>
<td>Sustainability</td>
<td>UEEENEEK142A</td>
<td>Apply environmentally and sustainable procedures in the energy sector</td>
</tr>
<tr>
<td>Working in the industry</td>
<td>UEEENEE148A</td>
<td>Carry out routine work activities in an energy sector environment</td>
</tr>
</tbody>
</table>
HSC examination

The Electrotechnology Curriculum Framework includes an HSC examination which provides the opportunity for students to have their HSC mark contribute to the calculation of their Australian Tertiary Admission Rank (ATAR).

The Electrotechnology HSC examination can contribute up to two units towards the calculation of a student’s ATAR.

Students who have completed the Electrotechnology (240 indicative hours) course are eligible to sit for the Electrotechnology HSC examination.

Students who want to sit for the Electrotechnology HSC examination must be entered for both the Electrotechnology (240 indicative hours) course and the Electrotechnology examination on Schools Online (Administration). It is the responsibility of the home school to enter students into VET Framework courses and VET HSC examinations when the course is studied at a TAFE NSW institute or private provider.

Students will sit for the Electrotechnology HSC examination at the same HSC examination centre where they sit all of their other written HSC examinations (usually at their home school).

The HSC examination is independent of the competency-based assessment undertaken during the course and has no impact on student eligibility for Certificate II in Electrotechnology (Career Start) (UEE22011).

HSC examination specifications

The HSC examination specifications, which describe the format of the external HSC examination, are contained in the Assessment and Reporting in Electrotechnology Stage 6 document.

The Electrotechnology HSC examination will consist of a 2-hour written paper. The paper will consist of four sections:

- Section I – objective response questions to the value of 15 marks
- Section II – short-answer questions to the value of 35 marks
- Section III – one extended response question to the value of 15 marks
- Section IV – one structured extended response questions to the value of 15 marks.

The Electrotechnology HSC examination is based on the HSC Content (focus areas) and employability skills for the Certificate II qualifications.
Relationship of the Electrotechnology (240 indicative hours) course structure to the HSC examination

- **HSC units of competency**
  - Mandatory units of competency
  - HSC focus areas
    - Components, tools and equipment
    - Direct current circuits
    - Drawings, diagrams and compliance
    - Safety
    - Sustainability
    - Working in the industry

- **HSC Content**

- **HSC examination**
  - one common examination
    - Section I
      - 15 objective response questions
    - Section II
      - short-answer questions
    - Section III
      - one extended response question
    - Section IV
      - one structured extended response question

- **HSC elective units of competency**
  - no HSC Content
  - not examinable
**Status of units of competency for the Electrotechnology HSC course and Certificate II in Electrotechnology (Career Start)**

To achieve *Certificate II in Electrotechnology (Career Start) (UEE22011)* the Electrotechnology Training Package requires students to achieve:

- 6 core units of competency (220 points) plus
- elective units of competency totalling 140 points:
  - maximum 60 points from Group A
  - minimum 80 points from Group B (all electives may be completed from Group B).

To achieve *Certificate II in Electrotechnology (Career Start) (UEE22011)* as a part of the HSC, students will do the HSC VET Electrotechnology (240 indicative hours) course.

To meet HSC course requirements, students completing the Electrotechnology (240 indicative hours) course must undertake **seven mandatory units of competency** [4 core, 1 Group A elective (40 points) and 2 Group B electives (60 points) for UEE22011] plus a minimum of 65 HSC indicative hours of HSC elective units of competency.

<table>
<thead>
<tr>
<th>Status in Electrotechnology Curriculum Framework</th>
<th>HSC indicative hours</th>
<th>Unit code</th>
<th>Unit title</th>
<th>Weighting points</th>
<th>Certificate II in Electrotechnology (Career Start)</th>
</tr>
</thead>
<tbody>
<tr>
<td>mandatory</td>
<td>15</td>
<td>UEEENEEE101A</td>
<td>Apply Occupational Health and Safety regulations, codes and practices in the workplace</td>
<td>20</td>
<td>core</td>
</tr>
<tr>
<td>mandatory</td>
<td>30</td>
<td>UEEENEEE102A</td>
<td>Fabricate, assemble and dismantle utilities industry components</td>
<td>40</td>
<td>elective – Group B</td>
</tr>
<tr>
<td>mandatory</td>
<td>60</td>
<td>UEEENEEE104A</td>
<td>Solve problems in d.c. circuits</td>
<td>80</td>
<td>core</td>
</tr>
<tr>
<td>mandatory</td>
<td>15</td>
<td>UEEENEEE105A</td>
<td>Fix and secure electrotechnology equipment</td>
<td>20</td>
<td>elective – Group B</td>
</tr>
<tr>
<td>mandatory</td>
<td>25</td>
<td>UEEENEEE107A</td>
<td>Use drawings, diagrams, schedules, standards, codes and specifications</td>
<td>40</td>
<td>elective – Group A</td>
</tr>
<tr>
<td>mandatory</td>
<td>15</td>
<td>UEEENEEE148A</td>
<td>Carry out routine work activities in an energy sector environment</td>
<td>40</td>
<td>core</td>
</tr>
<tr>
<td>mandatory</td>
<td>15</td>
<td>UEEENEEK142A</td>
<td>Apply environmentally and sustainable procedures in the energy sector</td>
<td>20</td>
<td>core</td>
</tr>
</tbody>
</table>

| **175**                                         | sub-total HSC indicative hours – mandatory units of competency |
To achieve *Certificate II in Electrotechnology (Career Start) (UEE22011)* students must undertake the **remaining 2 core units of competency**:

<table>
<thead>
<tr>
<th>Status in Electrotechnology Curriculum Framework</th>
<th>HSC indicative hours</th>
<th>Unit code</th>
<th>Unit title</th>
<th>Weighting points</th>
<th>Certificate II in Electrotechnology (Career Start)</th>
</tr>
</thead>
<tbody>
<tr>
<td>elective</td>
<td>15</td>
<td>UEENEEE141A</td>
<td>Use of routine equipment/plant/technologies in an energy sector environment</td>
<td>40</td>
<td>core</td>
</tr>
<tr>
<td>elective</td>
<td>10</td>
<td>UEENEEE179A</td>
<td>Identify and select components, accessories and material for energy sector work activities</td>
<td>20</td>
<td>core</td>
</tr>
<tr>
<td></td>
<td><strong>200</strong></td>
<td></td>
<td></td>
<td></td>
<td>sub-total HSC indicative hours – mandatory units of competency and remaining core units of competency</td>
</tr>
</tbody>
</table>

For the HSC students must undertake a further **40 HSC indicative hours** of units of competency to meet the requirements of the Electrotechnology (240 indicative hours) course.

To achieve *Certificate II in Electrotechnology (Career Start) (UEE22011)*, these need to include elective units of competency that have a total of **40 points** for the qualification (with a maximum of 20 points from Group A electives and a minimum of 20 points from Group B electives).

These units of competency may include the following which are available in the HSC elective pool and listed in the qualification packaging rules:

<table>
<thead>
<tr>
<th>Status in Electrotechnology Curriculum Framework</th>
<th>HSC indicative hours</th>
<th>Unit code</th>
<th>Unit title</th>
<th>Weighting points</th>
<th>Certificate II in Electrotechnology (Career Start)</th>
</tr>
</thead>
<tbody>
<tr>
<td>elective</td>
<td>10</td>
<td>UEENEEC001B</td>
<td>Maintain documentation</td>
<td>20</td>
<td>elective – Group A</td>
</tr>
<tr>
<td>elective</td>
<td>10</td>
<td>UEENEEC010B</td>
<td>Deliver a service to customers</td>
<td>20</td>
<td>elective – Group A</td>
</tr>
<tr>
<td>elective</td>
<td>10</td>
<td>UEENEEE020B</td>
<td>Provide basic instruction in the use of electrotechnology apparatus</td>
<td>20</td>
<td>elective – Group A</td>
</tr>
</tbody>
</table>
**Electrotechnology Curriculum Framework – Certificate II in Electrotechnology**

<table>
<thead>
<tr>
<th>Status in Electrotechnology Curriculum Framework</th>
<th>HSC indicative hours</th>
<th>Unit code</th>
<th>Unit title</th>
<th>Weighting points</th>
<th>Certificate II in Electrotechnology (Career Start)</th>
</tr>
</thead>
<tbody>
<tr>
<td>elective</td>
<td>10</td>
<td>CPCCOHS1001A</td>
<td>Work safely in the construction industry</td>
<td>10</td>
<td>elective – Group A</td>
</tr>
<tr>
<td>elective</td>
<td>10</td>
<td>HLTCPR211A</td>
<td>Perform CPR</td>
<td>10</td>
<td>elective – Group A</td>
</tr>
<tr>
<td>elective</td>
<td>20</td>
<td>UEENEEA101A</td>
<td>Assemble electronic components</td>
<td>40</td>
<td>elective – Group A</td>
</tr>
<tr>
<td>elective</td>
<td>15</td>
<td>UEENEEA102A</td>
<td>Select electronic components for assembly</td>
<td>20</td>
<td>elective – Group B</td>
</tr>
<tr>
<td>elective</td>
<td>5</td>
<td>UEENEE101A</td>
<td>Use computer applications relevant to a workplace</td>
<td>20</td>
<td>elective – Group B</td>
</tr>
<tr>
<td>elective</td>
<td>30</td>
<td>UEENEEE122A</td>
<td>Carry out preparatory energy sector work activities</td>
<td>60</td>
<td>elective – Group B</td>
</tr>
<tr>
<td>elective</td>
<td>25</td>
<td>UEENEEE130A</td>
<td>Provide solutions and report on routine electrotechnology problems</td>
<td>60</td>
<td>elective – Group B</td>
</tr>
<tr>
<td>elective</td>
<td>20</td>
<td>UEENEEE142A</td>
<td>Produce products for carrying out energy sector work activities</td>
<td>40</td>
<td>elective – Group B</td>
</tr>
<tr>
<td>elective</td>
<td>20</td>
<td>UEENEEE143A</td>
<td>Produce routine tools/devices for carrying out energy sector work activities</td>
<td>40</td>
<td>elective – Group B</td>
</tr>
<tr>
<td>elective</td>
<td>30</td>
<td>UEENEEH101A</td>
<td>Repair basic computer equipment faults by replacement of modules/sub-assemblies</td>
<td>40</td>
<td>elective – Group B</td>
</tr>
<tr>
<td>elective</td>
<td>30</td>
<td>UEENEEH102A</td>
<td>Repair basic electronic apparatus faults by replacement of components</td>
<td>40</td>
<td>elective – Group B</td>
</tr>
<tr>
<td>elective</td>
<td>35</td>
<td>UEENEE103A</td>
<td>Establish the basic operating conditions of vapour compression systems</td>
<td>60</td>
<td>elective – Group B</td>
</tr>
<tr>
<td>elective</td>
<td>20</td>
<td>UEENEEP024A</td>
<td>Attach cords and plugs to electrical equipment for connection to a single phase 230 Volt supply</td>
<td>20</td>
<td>elective – Group B</td>
</tr>
</tbody>
</table>