

## Assessment Schedule – 2014

### Technology: Demonstrate understanding of advanced concepts from computer science (91371)

Final grades will be decided using professional judgement based on a holistic examination of the evidence provided against the criteria.

#### Issues from the Specifications

Where a candidate has provided a brief report, the report should not be penalised because of length.

Candidate work in excess of 14 pages must not be marked.

Where a candidate has used a small font, markers should make a judgement about where to stop marking. This judgement should be made relative to 14 pages at Arial font.

Where work is illegible, it cannot be marked.

Digital submissions that cannot be read cannot be marked.

Achievement	Achievement with Merit	Achievement with Excellence
<p>Demonstrate understanding of advanced concepts from computer science involves:</p> <p>describing ways in which at least two different types of data can be represented using bits, eg</p> <ul style="list-style-type: none"> <li>• text</li> <li>• numbers</li> <li>• images</li> <li>• colour</li> <li>• sound</li> <li>• video</li> </ul> <p>describing the concept of encoding information using</p> <ul style="list-style-type: none"> <li>• compression coding</li> </ul> <p>and</p> <ul style="list-style-type: none"> <li>• error control coding</li> </ul> <p>and</p> <ul style="list-style-type: none"> <li>• Encryption</li> </ul> <p>and</p> <ul style="list-style-type: none"> <li>• typical uses of encoded information</li> </ul> <p>providing examples from human-computer interfaces that illustrate usability heuristics.</p>	<p>Demonstrate in-depth understanding of advanced concepts from computer science involves:</p> <p>comparing and contrasting at least two different ways in which at least two different types of data can be represented using bits, eg</p> <ul style="list-style-type: none"> <li>• text – ASCII, Unicode</li> <li>• number – integer, decimal, etc.</li> <li>• images – bitmap, vector</li> <li>• colour – 8 bit, 16 bit, 24 bit</li> <li>• sound – WAVE, MIDI.</li> </ul> <p>and discussing the implications</p> <p>discussing how a widely used technology is enabled by one or more of</p> <ul style="list-style-type: none"> <li>• compression coding</li> </ul> <p>or</p> <ul style="list-style-type: none"> <li>• error control coding</li> </ul> <p>or</p> <ul style="list-style-type: none"> <li>• encryption</li> </ul> <p>evaluating a given human-computer interface in terms of usability heuristics. (good &amp; poor compliance with Nielsen's heuristics).</p>	<p>Demonstrate comprehensive understanding of advanced concepts from computer science involves:</p> <p>evaluating, eg giving advantages and disadvantages, etc of a widely used system for</p> <ul style="list-style-type: none"> <li>• compression coding</li> </ul> <p>or</p> <ul style="list-style-type: none"> <li>• error control coding</li> </ul> <p>or</p> <ul style="list-style-type: none"> <li>• encryption</li> </ul> <p>suggesting at least two sensible improvements to a given human-computer interface based on an evaluation in terms of usability heuristics.</p>

## Appendix 1

Markers must exercise professional judgement to decide if a report demonstrates understanding. The following appendix provides guidance for markers making this judgement.

A report must use information to demonstrate understanding.

Reports described wholly or substantially by one or more of the statements in the left column demonstrate understanding.

Reports described wholly, or substantially, by one or more of the statements in the right column do not demonstrate understanding.

**Where the report is made up of both used and reproduced information, the marker must decide if the report is successful against the standard when the reproduced information is ignored.**

Evidence of <b>use</b> of information	Evidence of <b>reproduction</b> of information
Candidate's report describes and explains the candidate's use, in their practice, of information relating to the standard.	Information is presented in isolation from the candidate's Technological experiences. It offers nothing or little to suggest the information is related to a course of instruction at level 7.
<p>Information from the candidate's practice, research, the practice of others, and teaching is related to the candidate's technological experiences.</p> <p>The report describes experiences you would expect to come from a course of instruction derived from The Technology Learning area the NZC.</p> <p>These could include but are not limited to</p> <ul style="list-style-type: none"> <li>• testing and trialling within a modelling process</li> <li>• developing a conceptual statement</li> <li>• developing a conceptual design</li> <li>• development of a brief</li> <li>• material selection</li> <li>• refinement of a brief</li> <li>• development of a prototype</li> <li>• development of a one-off solution</li> <li>• demonstrate understanding of advanced concepts from computer science.</li> </ul>	
Information from research, the practice of others, or teaching is reported in the candidate's own voice.	Information is NOT in the candidate's voice. The word choice, sentence structure, sentence length, punctuation and so on are not what a candidate could be expected to produce.
<b>Referenced</b> , complex research information unchanged by paraphrase is related to other information in a manner that unambiguously constructs meaning. (very rare)	<b>Unreferenced</b> , complex, research information is presented as though it is the candidate's own work.

Where the marker suspects a report is a deliberate attempt to deceive, the report should be referred to the panel leader using the Irregular Booklet process.