NCEA Generic Technology Remote Learning and Assessment

NZQA has considered the impacts of the Covid-19 virus on teaching, learning and assessment programmes for NCEA Generic Technology. This document includes guidance for both internal and external Generic Technology Achievement Standards.

General Guidance

If students have an Internet connection, there are a number of options for collaborative working available to them. For example, they may be able to use video conferencing or the facilities of a cloud-based platform, or a learning management system.

Care must be taken when students are interacting online to ensure their safety.

This may pose issues around access and equity for some students, which you will need to consider in your programme planning.

Standards that have a practical component will need access to specialist equipment, tools and materials. For most students they are unlikely to have this access.

Supporting evidence

Evidence for these standards could be collected in a number of ways:

- Using cameras to capture or record what the students were saying.
- Annotations of images. Take photos, print them or annotate digitally.
- Video with voiceover using programmes such as screen-casting software.
- Using e-portfolio platforms to collate digital evidence.
- Written portfolios.

For standards that have a research and/or stakeholder feedback component, rather than presenting large amounts of gathered research or stakeholder surveys, evidence could be provided that summarises the findings along with what this means for the brief or conceptual design.

Generic Technology Matrix

KEY: A colour-coding system to categorise standards according to the advice in this document.

Green	These standards are suitable for remote teaching, learning and assessment.
Blue	Teachers can facilitate assessment against these standards by remote learning with guidance (refer to General Guidance above).
Red	These standards present significant problems for remote teaching, learning and assessment.

Domain	Level 1	Level 2	Level 3
Technology Generic	**AS91044** **1.1** **Undertake brief development to address a need or opportunity** Where students have access to research materials, this standard is suitable for distance learning and assessment on digital platforms, such as learning management systems, video conferencing or online documents. The stakeholder's requirement could be completed by other family members or the assessor if appropriate. 4 credits Internal	**AS91354** **2.1** **Undertake brief development to address an issue** Where students have access to research materials, this standard is suitable for distance learning and assessment on digital platforms, such as learning management systems, video conferencing or online documents. The stakeholder's requirement could be completed by other family members or the assessor if appropriate. 4 credits Internal	**AS91608** **3.1** **Undertake brief development to address an issue within a determined context** Where students have access to research materials, this standard is suitable for distance learning and assessment on digital platforms, such as learning management systems, video conferencing or online documents. The stakeholder's requirement could be completed by other family members or the assessor if appropriate. Wider stakeholders would need to be managed. 4 credits Internal

Domain	Level 1	Level 2	Level 3
Technology Generic	**AS91045** **1.2** **Use planning tools to guide the technological development of an outcome to address a brief** Where students have access to research materials, this standard is suitable for distance learning and assessment on digital platforms, such as learning management systems, video conferencing or online documents. 4 credits Internal	**AS91355** **2.2** **Select and use planning tools to manage the development of an outcome** Where students have access to research materials, this standard is suitable for distance learning and assessment on digital platforms, such as learning management systems, video conferencing or online documents. 4 credits Internal	**AS91609** **3.2** **Undertake project management to support technological practice** Where students have access to research materials, this standard is suitable for distance learning and assessment on digital platforms, such as learning management systems, video conferencing or online documents. 4 credits Internal
Technology Generic	**AS91046** **1.3** **Use design ideas to produce a conceptual design for an outcome to address a brief.** Where students have access to research materials, this standard is suitable for distance learning and assessment on digital platforms, such as learning management systems, video conferencing or online documents. The stakeholder's requirement could be completed by other family members or the assessor if appropriate. Functional modelling could be done using sketches, suitable modelling software or paper/cardboard mock-ups or models. 6 credits Internal	**AS91356** **2.3** **Develop a conceptual design for an outcome** Where students have access to research materials, this standard is suitable for distance learning and assessment on digital platforms, such as learning management systems, video conferencing or online documents. The stakeholder's requirement could be completed by other family members or the assessor if appropriate. Functional modelling could be done using sketches, suitable modelling software or paper/cardboard mock-ups or models. 6 credits Internal	**AS91610** **3.3** **Develop a conceptual design considering fitness for purpose in the broadest sense** Where students have access to research materials, this standard is suitable for distance learning and assessment on digital platforms, such as learning management systems, video conferencing or online documents. The stakeholder's requirement could be completed by other family members or the assessor if appropriate. Functional modelling could be done using sketches, suitable modelling software or paper/cardboard mock-ups or models. 6 credits Internal

Domain	Level 1	Level 2	Level 3
Technology Generic	**AS91047** **1.4** **Undertake development to make a prototype to address a brief.** This standard may require specialist equipment and materials. It is suggested that this standard be assessed once students have safe access to suitable materials, equipment and tools to produce the prototype. 6 credits Internal	**AS91357** **2.4** **Undertake effective development to make and trial a prototype** This standard may require specialist equipment and materials. It is suggested that this standard be assessed once students have safe access to suitable materials, equipment and tools to produce the prototype. 6 credits Internal	**AS91611** **3.4** **Develop a prototype considering fitness for purpose in the broadest sense** This standard may require specialist equipment and materials. It is suggested that this standard be assessed once students have safe access to suitable materials, equipment and tools to produce the prototype. 6 credits Internal
Technology Generic	**AS91048** **1.5** **Demonstrate understanding of how technological modelling supports decision-making** Teachers can facilitate assessment against this standard by remote learning with guidance. The current Assessment Specifications will continue to apply. Where the teaching and learning programme has been providing Technological experiences from the candidate's own practice, there may be a need to provide these experiences using case studies or research. 4 credits External	**AS91358** **2.5** **Demonstrate understanding of how technological modelling supports risk management** Teachers can facilitate assessment against this standard by remote learning with guidance. The current Assessment Specifications will continue to apply. Where the teaching and learning programme has been providing Technological experiences from the candidate's own practice, there may be a need to provide these experiences using case studies or research. 4 credits External	**AS91612** **3.5** **Demonstrate understanding of how technological modelling supports technological development and implementation** Teachers can facilitate assessment against this standard by remote learning with guidance. The current Assessment Specifications will continue to apply. Where the teaching and learning programme has been providing Technological experiences from the candidate's own practice, there may be a need to provide these experiences using case studies or research. 4 credits External

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Technology Generic	**AS91049** **1.6** **Demonstrate understanding of how materials enable technological products to function** Teachers can facilitate assessment against this standard by remote learning with guidance. The current Assessment Specifications will continue to apply. Where the teaching and learning programme has been providing Technological experiences from the candidate's own practice, there may be a need to provide these experiences using case studies or research. 4 credits External	**AS91359** **2.6** **Demonstrate understanding of the role of material evaluation in product development** Teachers can facilitate assessment against this standard by remote learning with guidance. The current Assessment Specifications will continue to apply. Where the teaching and learning programme has been providing Technological experiences from the candidate's own practice, there may be a need to provide these experiences using case studies or research. 4 credits External	**AS91613** **3.6** **Demonstrate understanding of material development** Teachers can facilitate assessment against this standard by remote learning with guidance. The current Assessment Specifications will continue to apply. Where the teaching and learning programme has been providing Technological experiences from the candidate's own practice, there may be a need to provide these experiences using case studies or research. 4 credits External

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Technology Generic	**AS91050** **1.7** **Demonstrate understanding of the role of subsystems in technological systems** Teaching and learning towards assessment of this standard is suitable remotely. The current Assessment Specifications will continue to apply. Standards that have a practical component will need access to specialist equipment, tools and materials. For most student they are unlikely to have this access. 4 credits External	**AS91360** **2.7** **Demonstrate understanding of redundancy and reliability in technological systems** Teaching and learning towards assessment of this standard is suitable remotely. The current Assessment Specifications will continue to apply. Standards that have a practical component will need access to specialist equipment, tools and materials. For most student they are unlikely to have this access. 4 credits External	**AS91614** **3.7** **Demonstrate understanding of operational parameters in complex and highly complex technological systems** Teaching and learning towards assessment of this standard is suitable remotely. The current Assessment Specifications will continue to apply. Standards that have a practical component will need access to specialist equipment, tools and materials. For most student they are unlikely to have this access. 4 credits External
Technology Generic	**AS91051** **1.8** **Demonstrate understanding of how different disciplines influence a technological development** Where students have access to research materials, this standard is suitable for distance learning and assessment on digital platforms, such as learning management systems, video conferencing or online documents. 4 credits Internal	**AS91361** **2.8** **Demonstrate understanding of sociocultural factors, and how competing priorities are managed, in technology** Where students have access to research materials, this standard is suitable for distance learning and assessment on digital platforms, such as learning management systems, video conferencing or online documents. 4 credits Internal	**AS91615** **3.8** **Demonstrate understanding of consequences, responsibilities and challenges involved in technology** Where students have access to research materials, this standard is suitable for distance learning and assessment on digital platforms, such as learning management systems, video conferencing or online documents. 4 credits Internal

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Technology Generic	**AS91052** 1.9 **Demonstrate understanding of the ways a technological outcome, people, and social and physical environments interact** Where students have access to research materials, this standard is suitable for distance learning and assessment on digital platforms, such as learning management systems, video conferencing or online documents. 4 credits Internal	**AS91362** 2.9 **Demonstrate understanding of the nature of technological outcomes** Where students have access to research materials, this standard is suitable for distance learning and assessment on digital platforms, such as learning management systems, video conferencing or online documents. 4 credits Internal	**AS91616** 3.9 **Demonstrate understanding of how the fitness for purpose of technological outcomes may be broadly interpreted** Where students have access to research materials, this standard is suitable for distance learning and assessment on digital platforms, such as learning management systems, video conferencing or online documents. 4 credits Internal
Technology Generic	**AS91053** 1.10 **Demonstrate understanding of design elements** Teachers can facilitate assessment against these standards by remote learning with guidance. The current Assessment Specifications will continue to apply. Where the teaching and learning programme has been providing Technological experiences from the candidate's own practice, there may be a need to provide these experiences using case studies or research. 3 credits External	**AS91363** 2.10 **Demonstrate understanding of sustainability in design** Teachers can facilitate assessment against these standards by remote learning with guidance. The current Assessment Specifications will continue to apply. Where the teaching and learning programme has been providing Technological experiences from the candidate's own practice, there may be a need to provide these experiences using case studies or research. 4 credits External	**AS91617** 3.10 **Undertake a critique of a technological outcome's design** Teachers can facilitate assessment against these standards by remote learning with guidance. The current Assessment Specifications will continue to apply. Where the teaching and learning programme has been providing Technological experiences from the candidate's own practice, there may be a need to provide these experiences using case studies or research. 4 credits External

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Technology Generic	**AS91054** **1.11** **Demonstrate understanding of basic human factors in design** Where students have access to research materials, this standard is suitable for distance learning and assessment on digital platforms, such as learning management systems, video conferencing or online documents. 4 credits Internal	**AS91364** **2.11** **Demonstrate understanding of advanced concepts related to human factors in design** Where students have access to research materials, this standard is suitable for distance learning and assessment on digital platforms, such as learning management systems, video conferencing or online documents. 4 credits Internal	

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Technology Generic	**AS91055** 1.12 **Demonstrate understanding of basic concepts used in manufacturing.** Where students have access to research materials, this standard is suitable for distance learning and assessment on digital platforms, such as learning management systems, video conferencing or online documents. 4 credits Internal	**AS91365** 2.12 **Demonstrate understanding of advanced concepts used in manufacturing.** Where students have access to research materials, this standard is suitable for distance learning and assessment on digital platforms, such as learning management systems, video conferencing or online documents. 4 credits Internal	**AS91619** 3.12 **Demonstrate understanding of the application of a technical area to a specific field.** Where students have access to research materials, this standard is suitable for distance learning and assessment on digital platforms, such as learning management systems, video conferencing or online documents. 4 credits Internal
Technology Generic	**AS91056** 1.10 **Implement a multi-unit manufacturing process.** This standard may require specialist equipment and materials. It is suggested that this standard be assessed once students have safe access to suitable materials, equipment and tools to produce the prototype. 4 credits Internal	**AS91366** 2.10 **Undertake development and implementation of an effective manufacturing process.** This standard may require specialist equipment and materials. It is suggested that this standard be assessed once students have safe access to suitable materials, equipment and tools to produce the prototype. 6 credits Internal	**AS91618** 3.10 **Undertake development and implementation of a green manufacturing process.** This standard may require specialist equipment and materials. It is suggested that this standard be assessed once students have safe access to suitable materials, equipment and tools to produce the prototype. 6 credits Internal