



## Written submission: Consultation on the draft Leaving Certificate Engineering specification

NCCA is redeveloping Leaving Certificate Engineering. The aim of this consultation is to obtain the open and honest views of all stakeholders: students, teachers, parents, and other interested parties. The feedback gained from the consultation will inform the work of the development group in preparing the final specification.

NCCA would greatly appreciate your feedback on the draft specification which can be found here: [Leaving Certificate Engineering](#)

When providing feedback, observations or comments, please reference the specific section and / or relevant learning outcomes.

The closing date for this consultation is 2<sup>nd</sup> May 2025 at 5pm.

---

### Data protection and open data section

NCCA is committed to protecting your privacy and does not collect any personal information about you through this written submission, other than information that you provide by your own consent. Where a respondent selects 'yes' to the question: *Are you consenting to be listed as a respondent to this consultation*, respondents are consenting to having their name / organisation's name published in the final report as respondents to the consultation.

Where a respondent selects 'yes' to the question: *Are you consenting for your submission to be published*, respondents are consenting to having their submission published on [ncca.ie](https://ncca.ie).

Any personal information you volunteer to the NCCA will be respected and NCCA will apply the highest standards of security and confidentiality in accordance with GDPR (2016) and the Data Protection Acts (1998 - 2018). Further information on the NCCA's Data Protection Policy can be found at <https://ncca.ie/en/legal-disclaimer-and-data-protection/>.

NCCA, as a public body operating under the Open Data and Public Service Information Directive (2021), is required to publish publicly funded research. In accordance with this Directive, any data from this will be anonymised and aggregated and only made available after the final report is published. This is expected to be in June 2025. All open data is made available alongside the report itself on the website [www.ncca.ie](https://www.ncca.ie)

NCCA may use the data you provide in the form of quotations. Where this happens, the quote will be anonymised.



## Respondent's details

What organisation are you submitting on behalf of?

NCSE

Are you consenting to be listed as a respondent to this consultation?

- ☒ Yes  
☐ No

If yes, please enter the name you wish to have published in the final report.

Jane McGuirk & Patrick Murphy

Are you consenting to have the submission published on ncca.ie?

- ☒ Yes  
☐ No



## Rationale, Aim, and Key Competencies [Pages 2,3 and 5]

**Rationale:** The rationale (P.2) outlines the nature of Engineering and the role and importance of Engineering in realising the purpose and vision of senior cycle.

**Aim:** The Aim (P.3) outlines the over-arching purpose of the subject and the relevance and expected impact of the subject on student learning.

In your opinion, do the rationale and aim capture the overarching purpose and nature of Engineering; the importance of the subject in realising the vision of senior cycle and the relevance and expected impact of this subject on student learning. Please provide specific feedback / observations / comments.

Yes

**Key Competencies:** Key competencies is an umbrella term which refers to the knowledge, skills, values and dispositions students develop in an integrated way during senior cycle. These competencies are linked and can be combined; can improve students' overall learning; can help students and teachers to make meaningful connections between and across different areas of learning; and are important across the curriculum.

The draft specification sets out examples of how key competencies can be developed in Leaving Certificate Engineering (P.5 – 8)

In your opinion, does this section effectively capture the development of student key competencies in Leaving Certificate Engineering? Please provide specific feedback / observations / comments.

Yes



## Strands of study and learning outcomes [ADD PAGE NUMBERS]

**Course overview:** The course overview sets out the knowledge, skills, values and dispositions for students in four strands. The specification emphasises a non-linear, integrated approach to learning across the strands. The details of the strands are described on pages 8 - 22 of the specification.

The details of the cross-cutting themes are described on pages 8 – 9 of the specification.

In your opinion, does the structure illustrate the connected nature of the strands and the development of student knowledge, skills, values and dispositions in an appropriate way? Please provide specific feedback / observations / comments.

Yes – clear and concise

### Strand 1: Engineering Processes (P.12 – 14)

Please provide your views on the learning set out in this strand with reference to

- clarity for planning for teaching and learning
- alignment with the rationale and aims
- opportunities for the development of key competencies and
- access and challenge for all students.

Please provide specific feedback / observations / comments.

The Engineering specification page 1 states that “the educational experience in senior cycle should be **inclusive of every student**, respond to their learning needs and celebrate value and respect diversity.”

Page 10 states that “Learning outcomes should be **achievable relative to each student’s individual aptitudes and abilities.**”

In Strand 1 there are a number of Learning Outcomes which require ‘physical abilities’ for example 1.7 demonstrate crafting skills; 1.11 using hand and machine tools; 1.24 demonstrate the correct use of simple and precision measuring tools.

A concern this raises is for students with a physical disability – how can the learning outcomes become more inclusive so as to enable students with physical disabilities to take senior cycle Engineering?

### Strand 2: Automation and Control Systems (P.15-16)



Please provide your views on the learning set out in this strand with reference to

- clarity for planning for teaching and learning
- alignment with the rationale and aims
- opportunities for the development of key competencies and
- access and challenge for all students.

Please provide specific feedback / observations / comments.

Strand 2 Learning Outcomes are clear, concise and designed to be achievable for all students commensurate with their aptitude and abilities.

### **Strand 3: Design Capability (P.17 – 19)**

Please provide your views on the learning set out in this strand with reference to

- clarity for planning for teaching and learning
- alignment with the rationale and aims
- opportunities for the development of key competencies and
- access and challenge for all students.

Please provide specific feedback / observations / comments.

Strand 3 Learning Outcomes are clear, concise and designed to be achievable for all students commensurate with their aptitude and abilities.

### **Strand 4: Engineering Principles and Energy (P.19 – 22)**

Please provide your views on the learning set out in this strand with reference to

- clarity for planning for teaching and learning
- alignment with the rationale and aims
- opportunities for the development of key competencies
- access and challenge for all students.

Please provide specific feedback / observations / comments.

Strand 4 Learning Outcomes are clear, concise and designed to be achievable for all students commensurate with their aptitude and abilities.



## Additional Assessment Component (AAC)

The design and manufacture project provides an opportunity for students to display evidence of their learning across all strands of the specification. The senior cycle key competencies of thinking and solving problems, being creative, communicating, working with others, and managing learning and self, developed through working with learning outcomes across the specification, will be applied through the student's engagement with the project.

A Design and Manufacture Project brief will be issued annually by the SEC. The brief will set out the requirements for the Design and Manufacture Project and will:

- set a context for the project
- provide guidance to students in the development of their project work
- allow students to develop their knowledge and understanding in areas related to the brief
- facilitate teachers and students in their planning.

This experience will allow students to demonstrate their creativity, showcase the breadth and depth of their practical and manufacturing ability, and refine their communication techniques as they develop, implement, and document their progress through the design and manufacturing process.

Please provide specific feedback / observations / comments on the AAC in Leaving Certificate Engineering with reference to how the AAC might motivate students, how it aligns to the learning outcomes in the specification and how it facilitates the development of key competencies.

Page 26 AAC: The design and manufacture project.

Will there be any accommodation regarding the actual manufacturing part of this AAC for a student with a physical difficulty?

Page 29 & 30 refers to Reasonable accommodations states that "certain areas of learning can be waived or exempted, provided that this does not compromise the overall integrity of the assessment. However, some areas .... cannot be waived because they are core to the subject specifications." Clarity around 'core areas' is needed, and these core areas should be inclusive to all students including students with physical disabilities.

## Supports for Successful Enactment



Please provide specific feedback / observations / comments on supports that might be needed for successful enactment of this subject specification.

Page 23 Teaching and for student learning

Paragraph 1 states that:

“Engineering practice is a blended experience of practical application supported by the theoretical principles of engineering. For the student this means behaving like an engineer through hands-on experience.” It goes on to speak about “hands-on engagement with engineering concepts and the development of an engineering mindset.”

It is important that schools and teachers understand ‘practical application’ and ‘hands-on’ in an inclusive sense so as to ensure no student is excluded due to a physical disability for example. A student may not be able to physically preform an operation. However, this does not mean that they do not have the knowledge, understanding and appreciation of the practical application. This needs to be made more explicit in the specifications.

Page 30 Reasonable accommodations - final paragraph.

If we are aiming for an education system inclusive of diversity, subject specifications cannot state that students “should carefully consider whether or not they can achieve the learning outcomes, or whether they may have a special educational need that may prevent them from demonstrating their achievement of the outcome, even after reasonable accommodations have been applied.” Rather, teachers need to develop their own pedagogy to include all learners in their class. While RACE could be improved for inclusion too, once the teacher has cognisance of RACE and thorough pedagogy has been delivered the results will speak for themselves.

Furthermore, the English specification has removed the wording above and has mentioned specifically the UDL framework that can be applied to remove barriers for all students. Teachers need to be reminded that it is their responsibility to design the curriculum around the needs of their students and to always plan for variability. The Engineering teacher “adapts teaching approaches, as required, to meet individual needs and specifically, to facilitate the achievement of targets that are set in the Student Support Plans, as appropriate to the subject area.” (Pg. 25 Guidelines for Post-Primary Schools Supporting Young People with Special Educational Needs in Mainstream Classes, DOE, 2024).