Chapter Title in Title Case in Trebuchet 20 pt

First Name other Initials Last Name Author 1, First Name other Initials Last Name Author 2, and First Name other Initials Last Name Author 3 in 14 pt italic, right aligned

This is the abstract section in which the authors describe in 150-250 words maximum what the reader can expect from their chapter.

Keywords: *up to six keywords, please select from Engineering Education Taxonomy – version 1.3 by Finelli (2021) unless not possible.*

1   Section Header 1, 14 pt, bold, numbered

Please use this template to write your chapter. Please do not change anything in the settings or *Styles* defined by Word of this file. By using this template, you will make the final formatting much easier for us, as this will not be done by the publisher. This section contains all the formatting instructions and Section 2 includes the Chapter Overarching Writing Instructions. Section 3 contains the instructions by the Part editors. Each chapter ends with a few mandatory sections for all chapters: *Further Reading and Resources, References, Contributor Statement*. Please see these sections for instructions.

1.1   *Subsection header 2, 12 pt, bold, italic, numbered*

This is the second level of possible headers

Subsubsection, header 3, 12 pt, bold, not numbered, sentence case

This is the third and final sublevel of possible headers.

Unnumbered sections

For unnumbered sections, such as References, there is an Unnumbered header 1 Section in the Styles menu.

1.2 Formatting Instructions

The body text is in **Tahoma**, 12 pt, single-spaced, justified with all margins set at 2,54 cm. All headers are in Trebuchet and all section headers and lower levels use sentence case. Only use italic, do **NOT** underline, except for hyperlinks. Each chapter should be between 6000 and 7000 words, inclusive of references, exclusive of authors biographies.

1.3 Examples in textbox

As the handbook is aimed at practitioners, examples will greatly benefit them. Therefore, examples will be highlighted in a textbox, created by making a single cell, page width table with a slightly different background colour as listed in the example below. All examples are numbered per chapter as shown below.

Example 1: title
Here is where one explains how something was implemented. The example should be attractive yet concise but contain enough information for the reader to understand what worked or did not work. For more details refer the reader to the References or the Further Reading and Resources section, where links to more details can be included. In Examples, Tahoma, 12 pt, justified is used.

1.4 Citations and Endnotes

Citations must be in text only, using italics and double quotation marks. When using a citation, please refer to the specific part of the source after the citation only, as shown in this example: *"Institutions of Higher Education can learn much from studying their alumni"* (Saunders-Smits, 2008, p.145)

Please also refer to specific parts of a source when referring to data, figures or other details that would be difficult to find in the source without more information. Guidance on how to cite specific parts of a source can be found in the APA Style Blog on citing specific parts of a source (American Psychological Association, 2022).

Please use endnotes (not footnotes), if you require them, which should be used for discursive purposes to expand on the text[i].

1.5 Language and Use of Generative AI

The handbook will be written in English using British spelling conventions, please use grammar and spelling checker software when writing. We will be writing in the active tense, please avoid using passive tense.

The handbook is focused on a European context. Please ensure your work is also understandable within a European context and avoid using vocabulary that is specific to a certain region. For instance, use *second-year student* instead of *sophomore* and *secondary education*, instead of *high school*. For more information on European context and the European Qualification Framework (EQF) we suggest you consult: the Wikipedia page on EQF ('European Qualifications Framework', 2024) as this is more accessible than the EQF webpages it refers to.

The discussion on the use of generative AI scientific publications is still ongoing hence we ask that you do not use Generative AI for writing or when creating illustrations.

1.6 Tables and Figures

Tables and figures should be used selectively and must be carefully chosen. Only include tables or figures when they are necessary for the reader's understanding of the chapter. Tables that simply list long data sets must not be included. It is preferred to summarise findings in the body of the chapter by citing the main takeaways over tables with data.

Tables

Tables must be no wider than text width, and its captions must use the table captions style (12pt, Tahoma, Italic, left aligned). Each table must be numbered using chapter number and table number (e.g., Table 2.1) and have an appropriate caption to go above the table. Table content is 12 pt, Tahoma, left justified, with the table header in Italic, the subheader in bold and table content as normal. Please, do not use automatic captions, keep your table length to a maximum of 1 page, and if possible, avoid landscape tables. All tables must be editable in Word.

Use the following Table style: Only horizontal top and bottom lines for the table and bottom line below the table header. Use no other lines in the table.

Table 1.1: A suitable caption for each table must be provided, left justified, italic, 12pt
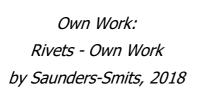
Table Header
Table subheader
Table text

Figures

Figures must also be no wider than text width and not exceed one page. Any text in a figure should use a sans serif font and be readable (ideally also 12 pt, Tahoma). To avoid figures floating around your document, we ask you to embed figures in a borderless table as illustrated in Figure 1.1 below. All figures must be centred. Each figure must be numbered using chapter and figure number (e.g., Figure 2.1a) and have an appropriate caption, using the figure captions style (12pt, Tahoma, centred, italic), listed in the table row underneath the figure. Please, do not use automatic captions (left. All figures must be at least 300 dpi to be included. Each image must also be supplied separately in .png, .jpeg or .tiff file format.

Own Work:

Rivets - Own Work

by Saunders-Smits, 2018

b) Creative Commons/ Public Domain:

Overall view of Oosterscheldekering surge barrier by V. Šiman. Licensed under CC BY 3.0

c) Copyrighted Image. SEFI – logo

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Figure 1.1: Examples of how to include and attribute

In line with accessibility standards, please ensure each illustration has an appropriate Alt-Text to allow those with a visual disability to hear the description of the image. See *Further Reading and Resources* below for resources on how to do this. If your Alt-Text says for illustration purposes only, your figure will be removed as only relevant figures will be included.

In line with our publisher's standards on copyright, each figure must also be attributed using the guidelines set out in their manual for attributing images in open textbooks (de Jong 2022). In Fig. 1.1 and the *References* section, we show you how to attribute the three types of images listed in this manual within the handbook using *the shorter attribution* version. We recommend creating your own images or using Creative Commons or Public Domain images only and not using copyrighted images as obtaining formal permission may take a lot of time and will be your responsibility as authors.

1.7 Indexing, Glossary, and Vocabulary Use

Index

Using the yellow highlighter in Word, please highlight all relevant terms in your text that should be added to the Index at the end of the book, each time they are used in context. This aids us in the final formatting of the book. Please only include words for indexing that are directly relevant to the subject matter, scope, and audience of the handbook. If an indexed word is arbitrarily used in passing, it should not be indexed. E.g., *inclusion* used to be discussed in terms of diversity, equity, and inclusion is indexed, but when talking about the *inclusion* of a skill in a course, the word inclusion should not be included.

Glossary

A glossary of terms will also be included in the book, listing all key definitions of the included competencies and skills as well as other key definitions. The editors will issue all authors with a first version at kick-off and provide updated versions each time authors receive their reviewers' comments during the project. Please send any

suggestions for additions to the glossary to your part editor. All proposals will be discussed by the editorial team before deciding on inclusion.

Vocabulary Use of Transferable Competencies and Skills

In this handbook, we will use the term *Transferable Competencies and Skills'* As already indicated by UNICEF (2019) many different names for transferable skills, such as transversal, 21st century, soft skills, etcetera exist. In engineering literature (Leandro Cruz et al., 2020, Craps et al., 2021), other terms used are professional, employability, and non-technical skills. In the context of this handbook, we will use the term transferable competency and skills. UNICEF defines transferable skills and competencies as those that are needed to adapt to various life contexts and that people can potentially transfer to different social, cultural or work settings (UNICEF, 2022). It subdivides these into Cognitive, Social and Emotional skills (UNICEF, 2019). Although in the English language, distinctions in definition can be made between the words: competency, competence, and skills, in many other languages, only one word exists for all three terms (Kearns et al., 2016, Guerrero & Del Los Rios, 2012). As this handbook is intended for an international audience, we will use the umbrella term of competencies and skills.

A background on the many different definitions of transferable competencies and skills and the use of the words: competence, competency, and skills will be discussed in Chapter 1.2 of the handbook.

2   Chapter Overarching Writing Instructions

Please structure your chapter in a concise, informative, and engaging way for the reader. Please note these points to avoid your chapter resembling a journal article or thesis-like text:

Avoid headings such as 'Methodology' or 'Methods', 'Literature Review', 'Research questions', 'Data and Findings', 'Results' etc with large amounts of unintegrated and dense data within, as these appear very journal-like. Book chapters should include information on data and methodology only where relevant to the wider argument and broader implications for the chapter; data should be interwoven to back up points and contribute to one overarching narrative. Always keep in mind the context of the book aims and overall themes/argument. Theming your chapter thematically is always preferable.

Avoid the inclusion of an appendix wherever possible, there is no need to include surveys or large amount of data. If needed, consider including links to these in the *Further References and Resources* section.

3   Specific section instructions Part 1

This section contains the part-specific instructions as created by the part editors. They will specify headers which in this template have been formatted as 'Heading 2' in the Styles Pane for readability, but when writing the chapter you must change the heading to 'Heading 1' in the Styles Pane. Split sections into relevant equivalent subsections using sub-headings if necessary.

3.1 [Heading 1] Introduction

Please explain to the reader why this chapter, why is what you discuss relevant to competencies and skills, and how the chapter is built up.

3.2 [Heading 1] Relevant section name

Such as perhaps: Why Accreditation, what are Competency Frameworks?

In this section, you start setting out your topic, etymology/genealogy (like what are historical developments, what references, who was involved in establishing it...) explaining the framework and/or terminology of what you are about to discuss to the engineering lecturer for whom most of this is new. When introducing various accreditation/competencies/etc frameworks please provide references for each framework so that interested readers can do a deep dive themselves.

3.3 [Heading 1] Relevant section name linked to the topic of the chapter

Such as an overview of existing competency and skills frameworks; the view of accreditation on competencies and skills.

If necessary, split into distinct multiple sections or split into relevant equivalent subsections using sub-headings. Please provide relevant references, where possible and make use of the Future Reading and Resources" section for readers to find more detailed information that exceeds the maximum capacity of the chapter.

3.4 [Heading 1] Future of Competencies and skills [in/and your topic]

List your argued future vision here.

3.5 [Heading 1] Relevant Section name for your recommendations/main takeaways

Recommendations and/or main takeaways you would like the engineering lecturer to take with them after reading this chapter.

4 Further Reading and Resources

Please list any further reading and resources in this section using APA style (7th edition) referencing. When using a reference management system, please disconnect any links to the reference manager system before submitting. See the suggestions for further reading below for more information.

American Psychological Association. (2024). APA Style common reference examples guide. https://apastyle.apa.org/instructional-aids/reference-examples.pdf

American Psychological Association. (2022). Citing specific parts of a source [Blog]. https://apastyle.apa.org/style-grammar-guidelines/citations/basic-principles/parts-source

de Jong, M. (2021). Manual for attributing images in Open Textbooks. Edusources. https://edusources.nl/materials/30604767-cfa2-407c-ac4d-42a00ba2897e/manual-for-attributing-images-in-open-textbooks

European Qualifications Framework. (2024). In Wikipedia. https://en.wikipedia.org/w/index.php?title=European_Qualifications_Framework&oldid=1253363851

Finelli, C. (2021). Engineering Education Research Taxonomy. Version 1.3. https://taxonomy.engin.umich.edu/taxonomy/

Harvard University, Digital Accessibility Services (n.d.). Write helpful Alt Text to describe images | Digital Accessibility. https://accessibility.huit.harvard.edu/describe-content-images

Scribbr. (n.d.). How to Cite in APA Format (7th edition) | Guide & Generator. Scribbr. https://www.scribbr.com/citation/generator/apa

TU Delft Library. (n.d.). CRediT and collaboration. TU Delft. from https://www.tudelft.nl/en/library/support/library-for-researchers/publishing-outreach/credit-and-collaboration

References

All references should follow APA style, 7th edition. See the APA Style manual (American Psychological Association 2020) for further details. The APA Common Reference Examples Guide (American Psychological Association 2024) has been added to the section Further Reading and Resources as well as the link to the online Scribr APA reference generator. Do not forget to include references for any illustrations you have used, such as Šiman (2008).

American Psychological Association. (2020). Publication manual of the American Psychological Association (7th ed.). https://doi.org/10.1037/0000165-000

American Psychological Association. (2024). APA Style common reference examples guide. https://apastyle.apa.org/instructional-aids/reference-examples.pdf

Craps, S., Pinxten, M., Knipprath, H., & Langie, G. (2021). Different roles, different demands. A competency-based professional roles model for early career engineers, validated in industry and higher education, European Journal of Engineering Education, https://doi.org/10.1080/03043797.2021.1889468

Cruz, M. L., Saunders-Smits, G. N., & Groen, P. (2020). Evaluation of competency methods in engineering education: a systematic review. European Journal of Engineering Education, 45(5), 729–757. https://doi.org/10.1080/03043797.2019.1671810

de Jong, M. (2021). Manual for attributing images in Open Textbooks. Edusources. https://edusources.nl/materials/30604767-cfa2-407c-ac4d-42a00ba2897e/manual-for-attributing-images-in-open-textbooks

Guerrero, D., & De los Ríos, I. (2012). Professional Competences: A Classification of International Models. Procedia - Social and Behavioral Sciences, 46, 1290–1296. https://doi.org/10.1016/j.sbspro.2012.05.290

Kearns, S. K., Mavin, T. J., & Hodge, S. (2016). Competency-based education in aviation: Exploring alternate training pathways. Ashgate.

NISO CRediT Working Group. (2022). ANSI/NISO Z39.104-2022, CRediT, Contributor Roles Taxonomy. NISO. https://doi.org/10.3789/ansi.niso.z39.104-2022

Saunders-Smits, G. N. (2008). Study of Delft aerospace alumni [PhD thesis, Delft University of Technology]. https://repository.tudelft.nl/record/uuid:c85e8096-48ad-47d6-944b-d9f99f358b5a

Šiman, V. (2008). Overall view of Oosterscheldekering surge barrier [Photograph]. https://commons.wikimedia.org/wiki/File:Oosterscheldekering-pohled.jpg

UNESCO. (2023 April 20). Information Literacy. https://www.unesco.org/en/ifap/information-literacy

UNICEF. (2019) Global Framework on Transferable Skills. UNICEF. New York. https://www.unicef.org/media/64751/file/Global-framework-on-transferable-skills-2019.pdf

UNICEF LACRO. (2022). The 12 Transferable skills. UNICEF, Panama. https://www.unicef.org/lac/media/32441/file/The%2012%20Transferable%20Skills.pdf

Contributor Statement

The publisher and the handbook make use of CRediT (Contributor Roles taxonomy), a new international standard to recognise people's contributions to output. By doing so, we can better indicate and acknowledge people's contributions to a chapter. In practice, this means that instead of mentioning people in the acknowledgements their contributions will be further specified using the 14 roles identified in CRediT (see Table 2.1)

Table 1.2: CrediT Contributor Role Taxonomy as defined by NISO Credit Working Group (2022)

Role	Definition
Conceptualization	Ideas; formulation or evolution of overarching research goals and aims.
Data curation	Management activities to annotate, scrub data and maintain research data (for initial use and later re-use.
Formal analysis	Application of statistical, mathematical, computational, or other formal techniques to analyse or synthesize study data
Funding acquisition	Acquisition of the financial support for the project leading to this publication.
Investigation	Conducting a research and investigation process, specifically performing the experiments, or data/evidence collection
Methodology	Development or design of methodology; creation of models.
Project administration	Management and coordination responsibility for the research activity planning and execution.

Resources	Provision of study materials, reagents, materials, patients, laboratory samples, animals, instrumentation, computing resources, or other analysis tools.
Software	Programming, software development; designing computer programs; implementation of the computer code and supporting algorithms; testing of existing code components.
Supervision	Oversight and leadership responsibility for the research activity planning and execution, including mentorship external to the core team.
Validation	Verification, whether as a part of the activity or separate, of the overall replication/reproducibility of results/experiments and other research outputs.
Visualization	Preparation, creation and/or presentation of the published work, specifically visualization/data presentation.
Writing - original draft	Preparation, creation and/or presentation of the published work, specifically writing the initial draft (including substantive translation).
Writing - reviewing and editing	Preparation, creation and/or presentation of the published work by those from the original research group, specifically critical review, commentary or revision – including pre- or post-publication stages.

We therefore ask that at the end of each chapter, a Contributor Statement is included, using Table 1.3, below, informed by the definitions of the ANSI/NISO Z39.104-2022 standard (NISO CRediT Working Group 2022) in Table 1.2.

Table 1.3 CrediT Contributor Statement [Delete all unused rows]

Conceptualization	*Please list all names (authors and others)*
Data curation	
Formal analysis	
Funding acquisition	
Investigation	
Methodology	
Project administration	
Resources	
Software	
Supervision	
Validation	
Visualization	

Writing - original draft

Writing - reviewing and editing

For more information and examples of such statements, please visit the CRediT and collaboration website of TU Delft Library as listed in the *Further Reading and Resources* section.

Authors' Biography

For each author, please provide their OrcidID and a short, 30 to 50-word biography (listing author name, affiliation, research interests, key expertise or key achievements) separately, which will be printed in the front matter of the book. For instance:

Author name (OrcidID) is a full professor in a topic at a university in a town in a country. Their primary research interests/key expertise/key achievements are that they are an author in this handbook.

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[i] This is where endnotes will go. Endnotes will appear at the end of the document and will also be Tahoma 12 pt, justified.