# **IENG – AHEP SYNOPSIS FORMS**

### The purpose of the Technical Report is to demonstrate that you have acquired the equivalent level of technical knowledge and understanding of scientific and engineering principles to the same level as those who fulfil the academic benchmark i.e. an accredited Bachelor’s degree, as described in the [Accreditation of Higher Education Programmes](https://www.engc.org.uk/media/3464/ahep-fourth-edition.pdf) 4th edition (AHEP) document

The AHEP document forms part of the standard used by the UK engineering profession to assess the competence and commitment of individual engineers and technicians. It was developed collaboratively, in consultation with engineers representing the breadth of the profession: from industry, academia and many different disciplines and specialisms.

The criteria against which candidates are assessed against in their Technical Report application are categorised under five engineering-specific areas of learning, as outlined in AHEP. Please refer to the B1-B18 learning outcomes on pages 27-31 for further guidance.

1. Science and mathematics
2. Engineering analysis
3. Design and innovation
4. The engineer and society
5. Engineering practice

The AHEP Synopsis Forms must describe *clearly and concisely* how you propose to fulfil each of these learning outcomes within your full Technical Report. To assist you, the sub-categories for each of the general learning outcomes are summarised at the top of each form.

**The forms should not exceed 1500 words in total.**

You and your sponsor should ensure that your Synopsis Forms are grammatically correct and free of spelling mistakes.

**Application Process**

Your Stage 1 Technical Report application should consist of the following documentation:

* A completed Stage 1 Technical Report Application Form
* A copy of the initial assessment e-mail from CIHT
* Your AHEP Synopsis Forms (1500 words max)
* A copy of your CV. This should cover your relevant academic qualifications as well as your work experience to date.
* CPD record (a minimum of 25 hours per year for **each** of the two years prior to the date of your application)

Your Stage 1 Technical Report submission can be submitted at any time throughout the year and should be sent to education@ciht.org.uk for an administrative check, **as one continuous PDF file**. Once an administrative check has been completed, you will be provided with further details on how to pay the Stage 1 Assessment fee.

**CIHT: AHEP SYNOPSIS FORM 1 (IEng)**

Number of words used for AHEP Synopsis Form 1: **…….**

**SCIENCE AND MATHEMATICS**

The study of engineering requires a substantial grounding in engineering principles, science and mathematics commensurate with the level of study.

* **B1 – Science, mathematics and engineering principles:** Apply knowledge of mathematics, statistics, natural science and engineering principles to broadly-defined problems. Some of the knowledge will be informed by current developments in the subject of study.

**Please outline the evidence that you propose to use in your Technical Report to demonstrate how you fulfil this learning outcome.**

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**CIHT: AHEP SYNOPSIS FORM 2 (IEng)**

Number of words used for AHEP Synopsis Form 2: **…….**

**ENGINEERING ANALYSIS**

Engineering analysis involves the application of engineering concepts and tools to analyse, model and solve problems. At higher levels of study engineers will work with information that may be uncertain or incomplete.

* **B2 – Problem Analysis:** Analyse broadly-defined problems reaching substantiated conclusions using first principles of mathematics, statistics, natural science and engineering principles.
* **B3 – Analytical tools and techniques:** Select and apply appropriate computational and analytical techniques to model broadly defined problems, recognising the limitations of the techniques employed.
* **B4 – Technical Literature:** Select and evaluate technical literature and other sources of information to address broadly defined problems.

**Please outline the evidence that you propose to use in your Technical Report to demonstrate how you fulfil this learning outcome.**

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**CIHT: AHEP SYNOPSIS FORM 3 (IEng)**

Number of words used for AHEP Synopsis Form 3: **…….**

**DESIGN AND INNOVATION**

Design is the creation and development of an economically viable product, process or system to meet a defined need. It involves significant technical and intellectual challenges commensurate with the level of study

* **B5 – Design:** Design solutions for broadly defined problems that meet a combination of societal, user, business and customer needs as appropriate. This will involve consideration of applicable health and safety, diversity, inclusion, cultural, societal, environmental and commercial matters, codes of practice and industry standards.
* **B6 – Integrated/systems approach** – Apply an integrated or systems approach to the solution of broadly defined problems.

**Please outline the evidence that you propose to use in your Technical Report to demonstrate how you fulfil this learning outcome.**

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**CIHT: AHEP SYNOPSIS FORM 4 (IEng)**

Number of words used for AHEP Synopsis Form 4: **…….**

**THE ENGINEER AND SOCIETY**

Engineering activity can have a significant societal impact and engineers must operate in a responsible and ethical manner, recognise the importance of diversity, and help ensure that the benefits of innovation and progress are shared equitably and do not compromise the natural environment or deplete natural resources to the detriment of future generations.

* **B7 – Sustainability:** Evaluate the environmental and societal impact of solutions to broadly-defined problems.
* **B8 – Ethics:** Identify and analyse ethical concerns and make reasoned ethical choices informed by professional codes of conduct.
* **B9 – Risk:** Use a risk management process to identify, evaluate and mitigate risks (the effects of uncertainty) associated with a particular project or activity.
* **B10 – Security:** Adopt a holistic and proportionate approach to the mitigation of security risks.
* **B11 – Equality, diversity and inclusion:** Recognise the responsibilities, benefits and importance of supporting equality, diversity and inclusion

**Please outline the evidence that you propose to use in your Technical Report to demonstrate how you fulfil this learning outcome.**

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**CIHT: AHEP SYNOPSIS FORM 5 (IEng)**

Number of words used for AHEP Synopsis Form 5: **…….**

**ENGINEERING PRACTICE**

The practical application of engineering concepts and tools, engineering and project management, teamwork and communication skills. Engineers also require a sound grasp of the commercial context of their work, specifically the ways an organisation creates, delivers and captures value in economic, social, cultural or other contexts.

* **B12 – Practical and workshop skills:** Use practical laboratory and workshop skills to investigate broadly defined problems.
* **B13 –** **Materials, equipment, technologies and processes:** Select and apply appropriate materials, equipment, engineering technologies and processes.
* **B14 – Quality management:** Recognise the need for quality management systems and continuous improvement in the context of broadly defined problems.
* **B15 – Engineering and project management:** Apply knowledge of engineering management principles, commercial context, project management and relevant legal matters.
* **B16 – Teamwork:** Function effectively as an individual, and as a member or leader of a team
* **B17 – Communication:** Communicate effectively with technical and non-technical audiences.
* **B18 – Lifelong learning:** Plan and record self-learning and development as the foundation for lifelong learning/CPD.

**Please outline the evidence that you propose to use in your Technical Report to demonstrate how you fulfil this learning outcome.**

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