# Final Report – Project Technology

- This is the main deliverable of the project module. The final report should cover aspects of the specification, design, implementation and testing. It should include a critical analysis and discussion of the work as well as conclusions from it. You are required to write & submit the report in the form of an Academic Paper as explained in the enclosed document of "Final Report Guidelines".
- Your final submission (the paper) should **not exceed 16 pages.** A penalty will be applied if the paper is over 16 pages which, in this case, includes appendices.

## What the Project / Final Report needs

- Research question – what do you want to know or test, the aim is new knowledge
- Expertise – mainly yours, with input from colleagues.
- Suitable scope and ambition – sufficient depth, but not too extensive for the time available.

Remember an undergraduate project will not cover as much as a Masters of PhD would cover. Usually you can test out one thing, "one loop" – probably no time to make improvements/ find the optimum, go round the loop again

- Project proposal (and project) must include a literature review – where does your proposed work fit into the research and technology landscape which already exists. Published literature is best, but you can refer to internal reports as well. Even if the internal reports are not available you can say what you are taking from them to inform your own work.
- Must go beyond a review of options/ review of literature
- Writing a procedure is not suitable by itself
- What you discover can feed into procedures or company reports, but what you actually submit needs to conform to the academic report /academic paper style.
- There is a word limit, and the style and structure should be like a research report or a typical conference paper submission.
- Will be submitted via Turnitin plagiarism checker

**Occupational Knowledge:**

NDT Engineers have knowledge of:

OK1. Material properties, electronic principles, mathematics and technical project management
OK2. Advanced NDT, condition monitoring, structural health monitoring and quality management
OK3. Commercial awareness and the economics of their industry sector, business improvement and project and business management techniques relevant to the engineering industry
OK4. Regulatory and international standards requirements, technology, safety and the environment
OK5. The interaction between NDT and other engineering functions, the consequences of failure and the contribution of NDT to asset management and life extension
OK6. Applying design processes, including materials selection that meet NDT standards
OK7. Root cause analysis and learning from experience (LFE) processes
OK8. The advantages of collaboration with other industry sectors in order to apply best practice.

**Occupational Skills:**

NDT Engineers:

OS1. Have advanced skills in NDT methods substantiating their lead competency role within their organisation and industry sector. Work in all industry sectors, such as nuclear or aerospace

OS2. Critically apply knowledge of the concepts, principles and theories of developing engineering technology relevant to the interdisciplinary fields of NDT

OS3. Work competently in a technical engineering environment, understanding and promoting personal responsibility for health, safety, radiation protection, environmental protection, quality, security, safeguards and principles of risk management

OS4. Analyse engineering problems, selecting and using mathematical and theoretical data to provide suitable NDT solutions with consideration of the entire inspection cycle

OS5. Apply their engineering knowledge to the development, operation, maintenance and progression of technologies used for NDT

OS6. Observe, record and draw conclusions from data and experimental evidence, recognising inherent uncertainties and limitations

OS7. Develop technical reports that meet the requirements of the prevailing verification process

OS8. Apply the standards and procedures for NDT as required by the industry sector

OS9. Develop and manage projects and contribute to financial planning, including some responsibility for the management and development of others.

**Behaviours:**

B1. Communicate effectively and appropriately using a full range of skills: technical speaking to a scientific/engineering audience, active listening, professional writing and technical presentation

B2. Demonstrate reliability, integrity and respect for confidentiality on work and personal matters in accordance with professional codes of conduct and ethical principles

B3. Understand the impact of work on others, especially where related to diversity and equality

B4. Take responsibility for personal development, demonstrating commitment to learning and self-improvement and be open to feedback

B5. Demonstrate a strong commitment to personal safety behaviours and understanding of the consequences as set out in the industry sector requirements

B6. Demonstrate compliance by following rules, procedures and principles to ensure work completed is fit for purpose, pay attention to detail and carry out verification checks throughout work activities

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As this is a “technical” project, we anticipate that it will make use of equipment to gather information to solve a technical problem. Typically this will be a problem that has been identified in the workplace and requires an NDT solution. It might be the introduction of a new (that is new to this problem) NDT technique or the comparison of two or more different techniques to see which one is better in terms of more accurate, more reliable, cheaper, faster etc. In carrying out the project you may elicit the views of others, which is OK, but what we do not want is a project which only elicits the views of others, such as using surveys. This course has been about NDT techniques, and that’s what we want to see used in the project.