
## *School of Computing, Engineering, and the Built Environment*
## Edinburgh Napier University MRes

**Application instructions:**
Detailed instructions are available at :
https://www.napier.ac.uk/research-and-innovation/doctoral-college/how-to-apply

# Project details

**Supervisory Team:** tbc

**Subject Group:** Engineering & Mathematics

**Funding status:** Self-funded

**Project Title:** MRes research degrees in Engineering & Mathematics

**Engineering & Mathematics Research Opportunities:**

The Engineering and Mathematics Subject Group at Edinburgh Napier University is dedicated to advancing knowledge and innovation across a diverse range of disciplines, addressing global challenges in energy sustainability, advanced manufacturing, automation, and mathematical modelling. Our research encompasses energy, materials and manufacturing, mechanical and design, mathematics and modelling, automation and robotics, and operations and production management. We are committed to delivering real-world impact through interdisciplinary collaboration and strong industry partnerships.

**Research Areas in Engineering & Mathematics:**

**Energy and Environmental Engineering:** Our research focuses on renewable energy systems, energy efficiency, and sustainable practices. We explore the operation and specification of renewable energy systems, the use and impact of appropriate materials and methods of manufacture and building services design for zero emissions.

**Materials and Manufacturing:** We investigate advanced materials, innovative manufacturing processes, and sustainable production techniques. Our work includes the development of new materials, optimization of manufacturing processes, and the integration of sustainable practices in production.

**Mechanical and Design Engineering:** Our research covers the entire product development cycle, including predictive engineering design modelling, multi-physics problems in solid mechanics, fluid mechanics, fluid-structure interaction, electro-magneto-mechanics, structural optimization, and technology-driven design development.

**Mathematics and Modelling:** We apply mathematical principles to solve complex engineering problems, focusing on applied mathematics, mathematical modelling, and computational mathematics. Our research aims to develop innovative solutions through rigorous mathematical analysis and simulation.

**Automation and Robotics:** Our research explores the integration of automation and robotics in manufacturing and other industries. We focus on developing autonomous robotic systems, flexible manufacturing systems, and advanced automation techniques to enhance efficiency and productivity.

**Operations and Production Management:** We investigate strategies to optimize operations and production processes, focusing on efficiency, quality, and sustainability. Our research includes process improvement, supply chain management, and the implementation of lean manufacturing principles.

**Our Commitment to Research Excellence**

Our work in the Engineering and Mathematics Subject Group aligns with global sustainability goals and industry needs, ensuring that our research contributes to more efficient, innovative, and sustainable engineering practices. We actively collaborate with industry partners, policymakers, and academic institutions to translate research into practical solutions.
We welcome prospective students and researchers interested in contributing to these dynamic fields. Whether your focus is on energy sustainability, advanced manufacturing, automation, or mathematical modelling, our research community provides a supportive and cutting-edge environment to develop impactful solutions for the future of engineering and mathematics.
For further information or to explore research opportunities, please visit our Engineering and Mathematics research page at Edinburgh Napier University.

# Candidate characteristics

**Education:**
A first degree (at least a 2.2) ideally in the Engineering & Mathematics subject areas

**English language requirement**
IELTS score must be at least 6.5 (with not less than 6.0 in each of the four components). Other, equivalent qualifications will be accepted. Full details of the University's policy are available online.

**Essential attributes:**

- Experience of fundamental Engineering & Mathematics subject related knowledge
- Competent in literature review, report writing and statistical and/or qualitative analysis
- Knowledge of research topic proposed
- Strong motivation, with evidence of independent research skills relevant to the project
- Good written and oral communication skills
- Good time management