

Terms of Reference

Centre of Materials Engineering (CME), University of Cape Town (UCT)

1 Purpose and Mandate

The Centre for Materials Engineering (the Centre) is an accredited research grouping hosted within the Department of Mechanical Engineering (the Department) and the Faculty of Engineering & the Built Environment (the Faculty) at UCT. The Centre operates in accordance with the University's Guidelines for Accredited Research Groupings and is subject to periodic review through the University Research Committee (URC).

The Centre serves as an enabling and coordinating structure, providing shared research infrastructure, technical expertise, training pathways, and governance support to its Academic Members. It does not direct individual research agendas. Rather, it functions as a foundational platform that enables member-led research through facilities, systems, and collective capacity, thereby enhancing research quality, postgraduate throughput, compliance, and external engagement.

2 Mandate and Strategic Aims

The Centre is committed to advancing research, education, and innovation in materials science and engineering. Its focus is to strengthen the understanding and application of the materials engineering tetrahedron, linking processing, structure, properties, and performance, while addressing national, industrial, and societal needs.

The strategic aims of the Centre are to:

- (i) advance high-quality, collaborative research in materials science and engineering;
- (ii) support national and industry priorities relevant to South Africa's material science and engineering, such as development, manufacturing, sustainability, performance challenges, etc.;
- (iii) publish high-impact research outputs and disseminate findings to academic and industry stakeholders;
- (iv) develop and sustain a strong pipeline of postgraduate researchers through structured training pathways;
- (v) provide and maintain high-quality shared research infrastructure;
- (vi) assist with securing and diversifying funding from public, industry, and international sources; and
- (vii) promote inclusivity, transformation, and equitable participation within the materials engineering research community.

3 Scope of Activities

The Centre's activities include:

- (i) governance and operation of laboratory facilities;
- (ii) delivery and academic governance of an Honours Programme;
- (iii) support of postgraduate research through facilities, coordination, and collective oversight mechanisms;
- (iv) facilitation of interdisciplinary collaboration across academia, industry, and government;
- (v) coordination of collective compliance with safety, ethics, and data management requirements; and
- (vi) provision of a coherent academic and operational structure that enables sustainable research activity.

4 Governance Structure

The Centre has a formal governance structure comprising a Director, Deputy Director, Honours Programme Convenor, and Technical Officer, collectively forming the Centre Leadership. The Leadership is the primary decision-making and executive body of the Centre and is responsible for implementing strategy, making operational decisions, and managing day-to-day operations within delegated authority.

The Centre is supported by a Steering Committee, which provides independent academic and operational oversight, strategic advice, and review of Centre performance. The Steering Committee does not manage routine operations; rather, it reviews leadership decisions, monitors risks, and advises on strategic and resource matters. The Steering Committee comprises the Director (chair), Deputy Director, Honours Programme Convenor, Academic Members, and a postgraduate student representative.

The Honours Committee is responsible for academic quality assurance and coordination of the Honours Programme and does not exercise centre-wide governance authority. The Honours Committee does not manage routine operations; rather, it monitors the Honours Programme, its risks, and provides strategic and resource advice. The Honours Committee comprises the Honours Programme Convenor (chair), course convenors, and a honours student representative.

5 Director

The Director provides strategic, academic, and operational leadership of the Centre and is accountable to the Department, the Faculty, and the URC. The Director is responsible for strategic direction, financial oversight, compliance, external representation, and formal reporting through Faculty and URC structures.

The Director retains executive accountability for all Centre activities and ensures that the Centre meets the criteria for continued URC accreditation, including performance, sustainability, and leadership continuity.

6 Deputy Director

The Deputy Director supports the Director in the operational leadership of the Centre. The Deputy Director leads the day-to-day academic governance of the Centre's laboratories and shared research facilities,

including oversight of laboratory policy implementation, coordination of access and prioritisation of shared infrastructure, and close collaboration with the Technical Officer on maintenance, safety, and compliance.

The Deputy Director operates with delegated authority, reports directly to the Director, and supports strategic and academic leadership as required. Operational performance and risks within the Deputy Director's remit are reviewed by the Steering Committee as part of its oversight function.

7 Honours Programme Convenor

The Honours Programme Convenor holds delegated authority for the academic coordination and quality assurance of the BSc Honours in Materials Science programme. Responsibilities include curriculum coherence, assessment moderation, teaching allocation (in coordination with the Department), and student progression, in compliance with Department, Faculty, and University regulations.

Programme income and expenditure are managed in consultation with the Director and Departmental Manager. The Honours Programme Convenor reports to the Department and Faculty, with programme performance, risks, and alignment with the Centre's research and training objectives reviewed by the Steering Committee.

8 Technical Officer

The Technical Officer manages the Centre's shared laboratory facilities and is responsible for equipment operation, maintenance, user training, scheduling, and technical compliance. The Technical Officer serves as the Centre's designated safety lead and coordinates health, safety, and laboratory compliance in alignment with University requirements.

The role is empowered with delegated operational authority within approved policies and budgets and reports directly to the Director. The Technical Officer works closely with the Deputy Director to ensure continuity, reliability, and compliance of the Centre's teaching and research platform.

9 Academic Members

Centre membership is open to academic staff whose research aligns with the Centre's scope and who commit to contributing to its collective activities. Academic Members retain full academic autonomy over research direction, funding acquisition and management, and student supervision.

In return for access to the Centre's enabling platform, members are expected to contribute to the Centre's sustainability and operations. Academic Member obligations include:

- (i) contributions to honours teaching and supervision;
- (ii) participation in governance and review activities;

- (iii) financial support for shared infrastructure, which may include overhead returns, partial support for technical staff, provision of soft-funded roles, support of Laboratory Engineer roles, or other agreed mechanisms.

Member contributions are reviewed annually to ensure transparency, equity, and sustainability, consistent with URC expectations for viable research groupings.

10 Research Groupings

Research groupings are thematic clusters within the Centre that articulate and showcase specific research agendas of its Academic Members. These groupings provide intellectual coherence, visibility, and a mechanism for coordination, but do not constitute independent governance or management units.

Research groupings are led by Academic Members and are intended to facilitate collaboration, shared use of infrastructure, joint postgraduate supervision, and collective positioning for funding opportunities. The establishment, modification, or discontinuation of research groupings is endorsed by the Centre Leadership and reviewed by the Steering Committee to ensure alignment with the Centre's mandate, capacity, and strategic priorities.

11 Postgraduate and Honours Student Representatives

Student representation within Centre governance structures provides a structured channel for feedback, communication, and consultation on matters affecting the student experience.

Postgraduate and honours student representatives serve on the Steering Committee and Honours Committee, respectively, in a non-executive, advisory capacity. Their role is to communicate student perspectives on facilities, training, supervision environments, and programme delivery, and to raise issues of concern through established governance channels. Student representatives do not participate in confidential personnel, financial, or strategic decision-making.

12 Planning, Reporting, and Review

The Centre operates on an annual planning cycle. Planning, reporting, and review processes are governed by University policies and URC requirements.

Governance arrangements, leadership roles, and sustainability mechanisms are reviewed periodically to ensure continued fitness for purpose and compliance with University requirements.