

Operational Plan for Academic Research

MSc. in Construction Project Management

(2025-2026)

Operational Plan for Academic Research: MSc. Construction Project Management; Academic Year: 2023-2024

Academic Program Information

Program Details	
College	College of Engineering
Department	Department of Civil Engineering
Program	MSc. In Construction Project Management

The operational plan for academic research is essential for the effective execution of the academic program. Regularly drafting, reviewing, and updating it helps the university achieve program goals and enhance education quality

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1. Introduction

The Research Operational Plan for the MSc in Construction Project Management (CPM) at King Khalid University lays the foundation for a structured, impactful, and innovation-driven research ecosystem. This plan is designed to guide research activities in alignment with Saudi Arabia's Vision 2030, the Aseer Region Development Strategy, and the institutional research priorities of King Khalid University (KKU).

As the Kingdom of Saudi Arabia transitions toward a diversified, knowledge-based economy, Vision 2030 emphasizes the importance of infrastructure modernization, local industry empowerment, and global competitiveness. The construction sector plays a pivotal role in achieving these ambitions — particularly through initiatives such as NEOM, The Line, Red Sea Project, and the ongoing revitalization of infrastructure across regions including Aseer.

In this context, research in Construction Project Management is not just academic; it becomes a strategic tool for national transformation. The Aseer Development Strategy—an integral regional extension of Vision 2030—aims to elevate the region's urban landscape, infrastructure, tourism, and economic sustainability. It envisions world-class urban environments, smart infrastructure, and green development, which all demand robust construction research capabilities.

King Khalid University, headquartered in Abha, is uniquely positioned to support these goals through its commitment to applied, impactful, and interdisciplinary research. KKU's strategic plan calls for:

- Strengthening graduate programs to support regional development,
- Enhancing research outputs through high-impact publications and funded projects,

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- Fostering innovation and entrepreneurship across engineering disciplines,
- Developing partnerships with industry and government.

The CPM research plan supports these directions by:

- Fostering high-quality academic and applied research that contributes to sustainable construction, project efficiency, and smart technologies in infrastructure,
- Encouraging faculty and student collaboration with regional stakeholders,
- Addressing real-world challenges such as cost overruns, project delays, risk, environmental impact, and stakeholder engagement in construction,
- Integrating tools like BIM (Building Information Modeling), AI, IoT, and green materials into construction research and training.

Ultimately, this research plan will empower graduates and faculty to lead the development of innovative solutions in construction project management—contributing directly to local and national development. It will also serve as a roadmap for integrating research into curriculum design, faculty development, postgraduate supervision, and industry collaboration.

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2. Research Philosophy and Framework

The research philosophy underpinning the MSc in Construction Project Management (CPM) at King Khalid University is rooted in pragmatism, emphasizing the use of both quantitative and qualitative methods to explore, analyze, and solve real-world challenges in the construction sector. This philosophy allows researchers to adopt flexible methodologies tailored to the nature of the problem and the contextual needs of the Kingdom of Saudi Arabia. It enables the program to foster practical, interdisciplinary, and industry-oriented research aligned with the goals of Saudi Vision 2030, the Aseer Region Strategic Plan, and KKU's academic vision. By combining scientific rigor with practical relevance, the CPM program positions its research output to address pressing construction challenges, such as sustainable infrastructure, project delays, digital integration, and risk management. Faculty and students are encouraged to collaborate across disciplines and engage with public and private stakeholders to ensure that research not only contributes to academic knowledge but also supports the transformation of the construction industry and the regional economy.

Main Components of the Research Framework:

- **Pragmatic Methodology:** Embracing both qualitative (interviews, case studies) and quantitative (surveys, simulations) approaches.
- **Interdisciplinary Focus:** Integrating civil engineering, project management, environmental science, and digital technologies.

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- **Applied Orientation:** Addressing practical construction problems relevant to local and national priorities.
- **Strategic Alignment:** Research topics support Vision 2030, regional development, and sustainable urbanization.
- **Technology-Enabled Research:** Utilizing tools like BIM, Primavera, AI models, and risk analysis software.
- **Ethical and Collaborative Culture:** Promoting integrity, stakeholder engagement, and multi-institutional collaboration.

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3. Strategic Research Goals

SRG1: Promote advanced research aligned with local construction industry needs.

SRG2: Facilitate publication in high-impact journals and conferences.

SRG3: Strengthen research supervision and training for postgraduate students.

SRG4: Develop a sustainable funding pipeline for research projects.

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Alignment of Program Goals with the Mission of the Program, College, and University

University Mission	College Mission	Program Mission	Main Directions	Program Goals
An invigorating academic setting that fosters knowledge creation and application, champions research and innovation, emphasizes societal responsibility, and advances sustainable development by maximizing our potential and resources.	To prepare a qualified engineering staff equipped with essential knowledge and skills in dealing with modern engineering technologies, in order to develop and improve our country's future plans	Providing Construction Project Management Graduates with high level of competence in academic excellence, modern technology and scientific research, and service to the community	Academic Excellence	1. To equip graduates with diverse knowledge and skills that makes them capable of coping with the complex environment of construction project management
			Academic Excellence; Community Partnership	2. To equip graduates for professional advancement, societal values, and leadership responsibility in their respective organizations
			Research, Innovation, and Entrepreneurship	3. To prepare graduates to pursue advanced degrees or seek professional certification in Construction Project Management or related field
			Community Partnership Soft Skills	4. To prepare graduates to actively participate in professional and scientific activities of the region relevant to Construction Project Management

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Alignment of Strategic Research Goals with the Program Goals and its Justification / Contribution

Program Goals (PG)	Strategic Research Goals (SRG)	Justification / Contribution
PG1: To equip graduates with diverse knowledge and skills to cope with the complex environment of construction project management	SRG1, SRG2, SRG3 Promote industry-relevant research, publish scholarly work, and enhance supervision capacity.	Exposure to applied, interdisciplinary research sharpens analytical, technical, and management skills. Publication and structured training improve understanding of complex project environments.
PG2: To equip graduates for professional advancement, societal values, and leadership responsibility	SRG2 Facilitate impactful publication and align with professional standards.	High-quality publications elevate professional visibility and credibility.
PG3: To prepare graduates to pursue advanced degrees or professional certification	SRG3, SRG4 Strengthen supervision and mentorship, support certification-based research, and ensure funding availability.	Training in academic research enables graduates to continue into PhDs or earn professional recognition, contributing to long-term career growth.
PG4: To prepare graduates to actively participate in professional and scientific activities	SRG1, SRG2, SRG4 Engage with real-world research, publish in conferences/journals, and fund initiatives that connect academia and industry.	Field-based and collaborative research fosters engagement with professional bodies and scientific networks, encouraging student and faculty participation in regional and international knowledge ecosystems.

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4. Research Themes

- Smart and Sustainable Construction
- Digitalization (BIM, Digital Twins)
- Risk and Contract Management
- Project Financing and Cost Control
- Resilient Infrastructure and Urban Planning
- Occupational Safety and Legal Frameworks

5. Research Governance and Structure

The Department Council oversees research planning, policy development, and quality assurance. The Research Unit manages implementation, progress reviews, training coordination, and reporting. The Quality Unit ensures research alignment with national accreditation bodies (e.g., NCAAA).

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6. Faculty Research Engagement

Faculty members play a pivotal role in shaping the research culture and scholarly output of the MSc in Construction Project Management (CPM) program. They are expected to actively contribute to the body of knowledge through the publication of at least two research articles annually in reputable, peer-reviewed journals indexed in Scopus or equivalent databases. In addition to producing high-quality research, faculty are responsible for mentoring MSc students throughout their thesis journey—guiding topic selection, methodology, data analysis, and publication. They are also encouraged to engage in academic service roles, such as peer reviewing journal manuscripts, participating in editorial boards, and contributing to conference committees. Faculty leadership is vital in establishing and coordinating research groups that focus on key thematic areas aligned with national priorities, such as sustainable construction, smart infrastructure, and risk management. To support and sustain these initiatives, faculty are expected to actively pursue research funding opportunities from internal university sources as well as external bodies, including national research agencies and industry partners. These efforts not only enhance individual academic profiles but also elevate the program's research standing, foster collaborative innovation, and strengthen the overall academic reputation of King Khalid University.

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7. Student Research Development

Student research development is a cornerstone of the MSc in Construction Project Management (CPM) program, ensuring that graduates are well-equipped with the skills and experience necessary to contribute meaningfully to both academic and industry-led research. As part of the program's graduation requirements, all students are expected to complete a rigorous research thesis that demonstrates their ability to apply theoretical knowledge to practical challenges within the construction sector. To support this, the university provides a structured and comprehensive framework that begins with research methodology courses designed to build foundational competencies in research design, data analysis, and academic writing. Students are then paired with experienced supervisors through a formal assignment process, and their progress is monitored by dedicated evaluation committees. The program also organizes proposal defense sessions to ensure research quality and direction, while writing support workshops help students articulate their findings clearly and professionally. Additionally, students are encouraged to submit their work to national and international conferences. The program also promotes student-faculty co-authorship in scholarly publications, fostering mentorship, enhancing research impact, and preparing students for future academic or professional pursuits. This holistic approach reinforces research excellence and graduate readiness.

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8. Resources and Infrastructure

A robust and well-supported research environment is essential for achieving excellence in the MSc in Construction Project Management (CPM) program. King Khalid University is committed to providing the physical, digital, and financial resources necessary to enable impactful research by both faculty and students. The program benefits from access to advanced laboratories equipped with modern tools for construction simulation, material testing, project modeling, and data analysis—facilitating hands-on experimentation and applied research. Students and researchers have full access to essential digital resources such as the SDL library, academic databases including Scopus, Elsevier, IEEE, and Springer, as well as specialized software for scheduling, cost estimation, and Building Information Modeling (BIM) or related open access software such FreeCAD, Edificius. To promote dissemination of research findings, the university offers financial assistance for attending national and international conferences, as well as for covering journal publication fees in high-impact outlets. In addition, administrative support is available to guide researchers through the grant application process, ensuring timely submission and compliance with funding agency requirements. This comprehensive resource framework not only enhances research productivity but also fosters innovation, interdisciplinary collaboration, and global engagement—ultimately contributing to the university's research vision and the Kingdom's developmental goals.

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9. Research Collaborations

Research collaboration is a strategic priority for the MSc in Construction Project Management (CPM) program, aimed at fostering innovation, enhancing research quality, and building impactful academic-industry linkages. The program actively seeks to strengthen both national and international partnerships to ensure research outcomes are aligned with real-world challenges and global standards. At the national level, Memoranda of Understanding (MOUs) are being pursued with leading construction companies and engineering consultancies across the Kingdom to facilitate access to case studies, project data, and expert mentorship. These partnerships not only support applied research but also open pathways for student internships and faculty consultancy. In parallel, the program encourages collaborative research with other universities, promoting interdisciplinary knowledge creation and co-authored publications. Furthermore, the program is targeting participation in government-funded research initiatives, particularly those aligned with Saudi Vision 2030, the Aseer regional plan, and sustainable infrastructure development. Through these collaborations, the CPM program aims to expand its research capacity, improve funding access, enhance the employability of graduates, and contribute meaningfully to national and international advancements in construction project management.

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10. Research Output and Dissemination

Research generated within the MSc in Construction Project Management program is actively disseminated through high-impact, peer-reviewed journal publications and presentations at renowned national and international conferences. The platforms ensure the visibility of research findings, foster academic dialogue, and enhance the professional profile of both students and faculty. Efforts are made to encourage co-authored publications and promote participation in events that align with Saudi Arabia's development goals and the global construction research community.

11. Risk Assessment and Mitigation

Effective research planning must proactively address potential risks that could hinder progress or impact quality. Within the MSc in Construction Project Management (CPM) program, several key risks have been identified. One major concern is faculty workload imbalance, as academic staff are often required to balance teaching, administrative duties, and research supervision, potentially affecting research productivity. Additionally, the low success rate of research grant applications may limit access to essential funding, slowing down project development and innovation. Another challenge is student disengagement, which can stem from limited research exposure, lack of confidence, or insufficient mentoring. To mitigate these risks, the program proposes several strategic actions. Targeted support for

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proposal writing, including workshops and mentorship from experienced researchers, will be implemented to enhance grant application quality and success rates. Furthermore, flexible timelines for student and faculty research deliverables will be introduced, recognizing the diverse pace of research activities while maintaining academic rigor. These measures aim to sustain a healthy, productive research environment, promote engagement, and ensure that research goals are achieved efficiently and effectively.

12. Capacity Building and Training

Capacity building and training are essential pillars of the MSc in Construction Project Management (CPM) program's research strategy, aimed at enhancing the skills, confidence, and readiness of both students and faculty. The program offers a series of structured workshops and training sessions tailored to support every stage of the research journey. Core sessions on research methodologies introduce qualitative, quantitative, and mixed-method approaches, equipping participants with tools for designing sound research studies. Proposal writing workshops guide researchers through the grant application process, improving the quality and competitiveness of funding submissions. Recognizing the importance of academic integrity, specialized sessions on plagiarism and research ethics are conducted to instill responsible research practices and compliance with institutional and national standards. To ensure impactful dissemination, publishing strategy workshops focus on journal selection, manuscript preparation,

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and peer-review navigation. Furthermore, practical training in research software tools such as MS Project for scheduling, SPSS for statistical analysis, and BIM for digital modeling ensures that students and faculty are proficient in the technical tools widely used in the construction industry. These capacity-building efforts contribute to creating a robust and research-literate academic community that drives innovation and aligns with the broader goals of Saudi Vision 2030.

15. Research Ethics and Integrity

Research ethics and integrity are foundational to the MSc in Construction Project Management (CPM) program, ensuring that all scholarly activities are conducted responsibly, transparently, and in accordance with both national and international standards. A graduate studies and scientific research committee oversees the ethical review process for all research proposals. This committee ensures strict adherence to protocols that protect confidentiality, maintain data security, and uphold the dignity and rights of participants throughout the research lifecycle. Researchers are required to obtain informed consent and comply with institutional guidelines for ethical treatment, especially in studies involving interviews, surveys, or field observations. In addition, the university enforces a zero-tolerance policy on plagiarism, with routine checks and education on proper citation practices embedded into student training. Faculty and students are also guided to align with international publication standards, including

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authorship ethics, conflict of interest disclosures, and responsible data reporting. These principles are reinforced through ethics training workshops and integrated into thesis evaluation criteria. By institutionalizing ethical best practices, the CPM program fosters a research culture that values integrity, transparency, and trust, while meeting the expectations of global academic and professional communities.

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SRG1: Promote advanced research aligned with local construction industry needs.

Sl. No	Key Performance Indicators	KPI Codes	Previous Performance Level	Target Performance Level	Current year Performance Level	Measurement Method/ Frequency	Responsibility For Measurement	Responsibility of the Review
1	Number of patents and innovative outputs and awards of excellence	KPI-RP-01	5	5		Innovation Office / Annual	Research Unit	Vice Dean
2	Proportion of students obtaining professional certifications (e.g., PMP, Saudi Council of Engineers) before or within one year of graduation	KPI-RP-02	100%	100%		Data Analysis / Annual	Research Unit	Vice Dean for Academic Affairs
3	Membership in professional and scientific society	KPI-RP-03	77%	100%		Data Analysis / Annual	Research Unit	Vice Dean for Academic Affairs
4	Proportion of graduation projects related to region relevant to Construction Project Management	KPI-RP-04	100%	100%		Data Analysis / Annual	Program Chair	Vice Dean for Academic Affairs

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SRG2: Facilitate publication in high-impact journals and conferences.

Sl. No	Key Performance Indicators	KPI Codes	Previous Performance Level	Target Performance Level	Current year Performance Level	Measurement Method/ Frequency	Responsibility For Measurement	Responsibility of the Review
5	Percentage of publications of faculty members	KPI-RP-05	100%	100%		Annual Report / Annual	Research Unit	Vice Dean / Quality Committee
6	Participation in conferences, seminars and training programs	KPI-RP-06	29	30		Data Analysis / Annual	Research Unit	Vice Dean / Chairman
7	Percentage of students who published their research in refereed journals or Conferences Proceeding	KPI-RP-07	60%	100%		Publication Records / Annual	Research Unit	Vice Dean / Quality Committee
8	Proportion of faculty who reviewed research article and masters/PhD thesis	KPI-RP-08	100%	100%		Data Analysis / Annual	Research Unit	Chairman and Quality Unit
9	Citations rate in refereed journals per faculty member	KPI-RP-09	332	300		Citation Index / Annual	Research Unit	Vice Dean for Academic Affairs
10	Rate of published research per faculty member	KPI-RP-10	10	12		Publication Records / Annual	Research Unit	Vice Dean for Academic Affairs

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SRG3: Strengthen research supervision and training for postgraduate students.

Sl. No	Key Performance Indicators	KPI Codes	Previous Performance Level	Target Performance Level	Current year Performance Level	Measurement Method/ Frequency	Responsibility For Measurement	Responsibility of the Review
11	Number of MSc theses not completed within stipulated period	KPI-RP-11	0	0		Registrar / Annual	Academic Affairs	Chairman / Quality Unit
12	Number of research workshops conducted	KPI-RP-12	6	7		Training Report / Annual	Training Unit	Quality Unit
13	Percentage of faculty engaged in research supervision	KPI-RP-13	83.3%	85%		Internal Records / Annual	Academic Affairs	Chairman
14	Number of research ethics violations reported	KPI-RP-14	0	0		Ethics Committee Reports / Annual	Ethics Committee	Quality Unit
15	Percentage of faculty members obtaining professional training	KPI-RP-15	100%	100%		Data Analysis / Annual	Research Unit	Vice Dean for Academic Affairs


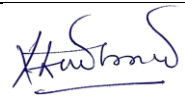
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SRG4: Develop a sustainable funding pipeline for research projects.

Sl. No	Key Performance Indicators	KPI Codes	Previous Performance Level	Target Performance Level	Current year Performance Level	Measurement Method/ Frequency	Responsibility For Measurement	Responsibility of the Review
16	Number of funded research projects	KPI-RP-16	12	13		Project Database / Annual	Research Unit	Vice Dean
17	Number of MoUs signed with industry partners	KPI-RP-17	0	1		MoU Register / Annual	External Relations Office	Chairman / Dean
18	Faculty satisfaction with research resources and support	KPI-RP-18	4.54	4.3		Faculty Survey / Annual	Quality Unit	Chairman
19	Student satisfaction with research resources and support	KPI-RP-19	4.66	4.3		Faculty Survey / Annual	Quality Unit	Chairman

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Approval

Position	Name	Signature
Chairman	Dr. Meshel Qablan Alkahtani	
Quality Coordinator	Dr Mohd. Ahmed	

Council / Committee	Department Council Meeting
Reference No.	NO. 1/47-1-18
Date	27-08-2025