
INDUSTRY COLLABORATIONS & KNOWLEDGE TRANSFER (ICKT)

Building • Talent • Innovation • Research Ecosystem

HAND BOOK — 2026 – 27

1. INTRODUCTION

The future of higher education is being reshaped by the convergence of **Artificial Intelligence, Global Capability Centers, deep technologies, quantum computing and rapidly evolving industry expectations**. In this new environment, organisations seek graduates who are not only technically competent, but also capable of applying knowledge to real-world challenges, working with intelligent technologies, innovating continuously, understanding business contexts and creating measurable value.

Recognising this transformation, the Institute of Aeronautical Engineering has established the **Industry Collaborations & Knowledge Transfer (ICKT) Department** as a strategic institutional initiative to strengthen industry engagement, foster innovation, accelerate research translation and build future-ready talent.

Department serves as the institutional bridge between academia, industry, Global Capability Centers, technology enterprises, startups, research organisations and innovation ecosystems. Its role extends beyond conventional industry interactions. The Department is designed to convert partnerships into measurable academic, professional, research and institutional outcomes.

Through a structured Talent–Innovation–Research framework, ICKT strengthens industry-integrated learning, professional readiness, applied research, knowledge transfer, technology adoption, innovation and institutional visibility.

2. INDUSTRY LANDSCAPE IN INDIA

Market Intelligence Driving Strategy

India's technology and innovation ecosystem is undergoing exponential expansion across IT services, startups, Artificial Intelligence, and Quantum technologies. These sectors define the future demand landscape for engineering talent and institutional partnerships.

2.1 IT & ITES Ecosystem — The Talent Backbone

26,000+ Active Companies (NASSCOM 2025)

India's IT & ITES sector remains the largest structured employment engine in the country.

- ◆ 26,000+ active companies (NASSCOM 2025)
- ◆ India is the global hub for software services, engineering delivery, and digital transformation
- ◆ Strong demand for: Software engineering, Cloud & DevOps, Cybersecurity, Data engineering, Enterprise digital transformation

Strategic Interpretation for ICKT

This ecosystem represents the largest and most stable industry partnership base for: MoUs, Industry-led curriculum, Internship pipelines, GCC collaboration and Placement acceleration programs.

★ *IT/ITES forms the foundation layer of industry engagement strategy*

2.2 Startup Ecosystem — The Innovation Engine

1,17,000+ DPIIT-Recognised Startups

India is now the 3rd largest startup ecosystem globally, driven by innovation, digital platforms, and product engineering.

- ◆ 1.17 lakh+ startups registered under DPIIT
- ◆ Strong growth in SaaS, FinTech, HealthTech, EdTech, AI startups
- ◆ High demand for: Product engineers, Full-stack developers, AI/ML engineers, UX & system designers, Growth and analytics professionals

Strategic Interpretation for ICKT

Startups act as: Real-world learning laboratories, Innovation & incubation partners, Live project ecosystems, Entrepreneurial training grounds.

★ *Startups are the experiential learning and innovation acceleration layer*

2.3 AI Ecosystem — The Transformation Layer

6,000+ Core AI Companies (incl. 200+ Generative AI firms)

India is rapidly becoming a global AI development and adoption hub.

- ◆ 6,000+ AI-focused companies
- ◆ Includes 200+ Generative AI firms (NASSCOM)
- ◆ AI embedded across industries: finance, healthcare, manufacturing, retail, logistics

Key Skill Demand Areas:

- ◆ Generative AI & LLMs
- ◆ Machine Learning & Data Science
- ◆ AI Product Engineering
- ◆ Intelligent Automation
- ◆ AI Governance & Ethics

Strategic Interpretation for ICKT

AI is not a domain — it is a cross-cutting capability layer across all engineering disciplines.

★ *AI defines the future skill architecture of all engineering graduates*

2.4 Quantum Technology — The Frontier Layer

50+ Quantum Tech Startups | ₹6,000 Cr National Quantum Mission

India is entering the early but strategic phase of Quantum Technology development, supported by the National Quantum Mission.

- ◆ ₹6,000 Cr National Quantum Mission initiative
- ◆ 50+ quantum startups and emerging research firms
- ◆ Applications in: Cryptography & cybersecurity, Advanced computing, Materials science, Aerospace simulation, Drug discovery

Strategic Interpretation for ICKT

Quantum computing represents: Early-stage ecosystem, High-impact research opportunity, First-mover advantage for academia.

3. STRATEGIC CONTEXT: INDUSTRY INTELLIGENCE AS AN ACADEMIC IMPERATIVE

India is at a decisive inflection point in its technology and innovation journey. The accelerated growth of Global Capability Centers, Artificial Intelligence, digital engineering, startups, deep technology and quantum computing is redefining the competency expectations of engineering graduates and academic institutions.

The emerging requirement is no longer limited to technical knowledge. Industry increasingly seeks graduates who can apply engineering principles to complex business problems, work effectively with AI-enabled systems, collaborate across disciplines, innovate with speed, communicate professionally and contribute meaningfully in dynamic work environments.

This shift requires institutions to move beyond conventional academic delivery and establish a systematic mechanism through which industry intelligence informs academic planning, student development, research priorities and institutional strategy.

For IARE, industry trends are not viewed merely as market developments. They are treated as strategic inputs for academic transformation, institutional differentiation and long-term value creation.

3.1 Global Capability Centers: A Strategic Opportunity

India has emerged as a global hub for Global Capability Centers. More than 2,100 GCCs operate in the country, employing over 2.3 million professionals. The GCC market has grown from approximately USD 63 billion to nearly USD 98.4 billion, with Hyderabad positioned as one of India's fastest-growing GCC destinations.

Modern GCCs are no longer back-office support centres. They are strategic innovation hubs driving product engineering, Artificial Intelligence, analytics, cybersecurity, research and development, digital transformation and enterprise innovation.

This growth creates a major opportunity for IARE to build sustained partnerships with GCCs and prepare students for enterprise-scale technology roles through capability development, industry mentoring, internships, projects, certifications and professional readiness programmes.

3.2 Artificial Intelligence and Industry 4.0

Artificial Intelligence is rapidly becoming the foundational technology layer across enterprises. Generative AI, Large Language Models, Agentic AI, intelligent automation, cloud-native systems and data engineering are transforming product development, customer engagement, research, operations and decision-making.

The global AI market is projected to grow from approximately USD 244 billion in 2025 to over USD 1.8 trillion by 2030. This growth is creating sustained demand for professionals who possess technical competence, domain awareness, ethical judgment, problem-solving ability and the capacity to work effectively alongside intelligent systems.

For academic institutions, this demands a shift from knowledge delivery to AI-enabled capability development. Students must be prepared not only to use AI tools, but also to validate, challenge, improve and responsibly apply AI-generated outcomes.

3.3 Startup and Innovation Ecosystem

India's startup ecosystem, with over 1.17 lakh DPIIT-recognised startups, offers a powerful platform for experiential learning, innovation, entrepreneurship, product development and real-world problem-solving.

Startups provide students with exposure to agile work environments, emerging technologies, product thinking, customer-centric innovation and business challenges. They also offer opportunities for faculty engagement, mentoring, prototype development, applied research, consulting and technology commercialisation.

IARE aims to leverage this ecosystem to encourage students to become innovators, entrepreneurs and solution creators — not merely job seekers.

3.4 Quantum Computing and Deep Technologies

Quantum Computing is emerging as the next frontier of technological advancement. The global quantum computing market is expected to grow from approximately USD 1.4 billion today to more than USD 4.2 billion by 2030.

Quantum technologies are expected to influence sectors such as aerospace, healthcare, manufacturing, cybersecurity, logistics, materials science and advanced engineering. Early academic engagement in quantum computing, quantum communication, quantum sensing and related deep technologies will enable IARE to build future capability, research readiness and a first-mover advantage.

4. WHY ICKT?

The future of industry will be shaped not by technology alone, but by the ability to combine technology, business, innovation and human intelligence.

As Artificial Intelligence, GCCs, automation and emerging technologies redefine the workplace, organisations seek professionals who can:

- ◆ Apply technology to solve business and societal problems
- ◆ Understand industry domains, enterprise processes and customer needs
- ◆ Innovate, research and develop products and solutions
- ◆ Work effectively in multidisciplinary and diverse teams
- ◆ Communicate, collaborate and influence professional decisions
- ◆ Use modern engineering tools and AI-enabled platforms responsibly
- ◆ Validate, challenge and improve AI-generated outcomes
- ◆ Demonstrate adaptability, ethics and lifelong learning capability

The gap is no longer only in technical education. The gap lies in developing talent that is industry-relevant, innovation-driven, business-aware and capable of creating value.

We address this gap by establishing a structured interface between academic learning, industry requirements, innovation, research and professional development.

5. THE VALUE CREATION FRAMEWORK

The Industry Collaborations & Knowledge Transfer Department is a strategic institutional mechanism that integrates industry engagement with academic quality, Outcome-Based Education, student development, innovation and continuous improvement.

ICKT converts industry intelligence into structured academic and institutional action through:

- ◆ Strategic Industry Collaborations and Global Partnerships
- ◆ Corporate Academies, Future Skills and Global Certifications
- ◆ GCC Readiness, Enterprise Skills and Professional Development
- ◆ Industry-Integrated Learning and Experiential Education
- ◆ Artificial Intelligence, Data, Cloud, Cybersecurity and Emerging Technology Initiatives

- ◆ Innovation, Applied Research, Intellectual Property and Technology Transfer
- ◆ Industry Mentoring, Live Projects and Real-World Problem Solving
- ◆ Faculty Industry Engagement, Consultancy and Thought Leadership
- ◆ Knowledge Transfer, Technology Adoption and Industry Integration

The Department strengthens the ability of IARE to continuously align academic processes with evolving industry requirements while creating measurable value for students, faculty, industry and society.

6. FUTURE OUTLOOK

To establish IARE as a preferred destination for industry collaboration, innovation, research and knowledge transfer by creating a sustainable Talent–Innovation–Research ecosystem that generates measurable value for students, faculty, industry and society.

IARE envisions an academic ecosystem where students graduate with strong engineering foundations, industry-relevant capabilities, innovation mindset, professional confidence and the ability to create value in an AI-powered global economy.

Redefining Engineering — Techno-Functional and AI-Integrated Capability Framework for Next-Generation Graduates

6.1 Context: A Structural Shift in Global Employability

The global hiring ecosystem is undergoing a fundamental transformation. Industry expectations are no longer limited to programming proficiency or academic performance. Employers today evaluate graduates based on their ability to operate across **technology, business, product, domain, and AI-driven environments simultaneously**.

The traditional model of producing "software coders" or "discipline-specific engineers" is rapidly becoming insufficient in the context of modern enterprise needs, Global Capability Centers (GCCs), and AI-enabled organizations.

The emerging expectation is clear:

► **Graduates must understand what to build, why to build it, how it generates value, and how AI can accelerate its delivery and optimization.**

This shift demands a transition from conventional education to a **Techno-Functional, Industry-Integrated, AI-Ready learning ecosystem**.

6.2 Product Understanding: From Code Execution to Value Creation

Modern enterprises operate through products, not isolated technical tasks. Therefore, students must move beyond coding as an execution activity to understanding the **purpose and impact of products**.

Core Expectations

- ◆ Understanding user problems and market needs
- ◆ Mapping features to user experience and business outcomes
- ◆ Awareness of product lifecycle: ideation → development → deployment → scaling → monetization
- ◆ Evaluating whether a solution is required before building it

Industry Examples

- ◆ **UPI Platforms (PhonePe / Google Pay):** Transaction systems are designed to reduce friction, thereby increasing adoption and transaction volume.

- ◆ **Amazon / Flipkart:** Recommendation systems directly increase conversion rate and revenue per user.

Key Shift: From "Can I build this?" to "Should this be built and what business value does it generate?"

6.3 Business & Revenue Intelligence: Engineering as a Value Driver

Revenue Generation Models in Digital Businesses

Modern digital companies mainly earn money through a few clear and simple models. Understanding these helps engineers connect technology with business value.

1. Subscription Model

In this model, users pay a fixed amount regularly (monthly or yearly) to continue using a service.

- ◆ Provides continuous access to services
- ◆ Ensures stable and predictable income for companies
- ◆ Focus is on long-term customer engagement

Examples: Netflix (movies and series), Spotify (music streaming), Microsoft 365 (software tools)

Key Idea: Pay regularly → use continuously

2. Platform / Commission Model

In this model, the company connects users (such as buyers and sellers) and earns a commission from each transaction.

- ◆ Company acts as an intermediary platform
- ◆ Revenue increases with more users and transactions
- ◆ Value comes from enabling connections

Examples: Uber (driver and passenger), Swiggy / Zomato (restaurants and customers), Airbnb (hosts and guests)

Key Idea: Connect users → earn from each interaction

6.4 Industry Domain Specialization: From Generalists to Context-Aware Engineers

Employability is increasingly determined by domain depth rather than generic technical capability. Industry demands engineers who understand sector-specific workflows, constraints, and regulatory environments.

Core Domains

- ◆ **Banking & Financial Services (BFSI):** digital banking systems, fintech platforms, fraud detection, compliance automation
- ◆ **Healthcare:** electronic health records, AI-assisted diagnostics, hospital information systems
- ◆ **Retail & E-Commerce:** recommendation engines, demand forecasting, inventory optimization
- ◆ **Insurance:** underwriting systems, claims automation, fraud detection

Institutional Implication

This necessitates the introduction of **credit-based domain specialization tracks**, such as:

- ◆ Retail Technology Systems
- ◆ Banking & Financial Systems Engineering
- ◆ Healthcare Informatics & AI Systems

🎯 **Key Framework: Techno-Functional Talent = Technology + Domain Knowledge + Business Context**

6.5 Communication Transformation: From Language Skills to Business Impact Communication

Communication in the modern workplace is not about language fluency—it is about clarity, influence, and decision enablement.

Core Expectations

- ◆ Business writing (emails, proposals, reports, documentation)
- ◆ Client and stakeholder communication
- ◆ Translation of technical output into business impact statements
- ◆ Structured articulation of problems and solutions

Industry Examples

"API issue fixed" → "Resolved payment failure issue; transaction success rate improved from 92% to 99.6%, improving revenue stability"

Project reporting: Instead of logs → focus on **impact metrics and business outcomes**

Key Shift: *Communication evolves from expression to decision influence.*

6.6 Coding Paradigm Shift: From Writing Code to Engineering Judgment

With the rise of AI-assisted development tools, the role of coding is shifting from manual implementation to system-level thinking and validation.

Core Expectations

- ◆ Evaluating multiple solution approaches
- ◆ Designing scalable and resilient architectures
- ◆ Optimizing performance and resource utilization
- ◆ Critically assessing AI-generated code

Industry Examples

- ◆ **Swiggy / Zomato:** System design involves delivery routing optimization, load balancing, and real-time allocation—not just API development
- ◆ **Large-scale systems (Google/Amazon):** Engineering decisions focus on scalability, latency, and fault tolerance

Key Shift: *From coding execution → to engineering judgment and system thinking*

6.7 Prompt Engineering: New Digital Literacy for the AI Era

As AI becomes embedded across all sectors, the ability to effectively interact with AI systems is becoming a foundational skill.

Core Expectations

- ◆ Designing structured, context-rich prompts
- ◆ Iterative refinement of AI outputs
- ◆ Integration of AI tools into software development and decision workflows
- ◆ Responsible and ethical use of generative AI

Industry Examples

Basic prompt: *"Write login code"*

Advanced prompt: *"Design a secure authentication system with JWT (JSON Web Token), encryption, rate limiting, and scalability for 1M users with architecture explanation"*

Key Insight: *Prompt engineering is becoming the interface between human intent and machine intelligence.*

6.8 Strategic Institutional Impact

Institutions adopting this framework will produce graduates who are:

- ◆ Industry-ready from day one

- ◆ Capable of working across technology, business, and domain layers
- ◆ Aligned with GCCs, product companies, and AI-driven enterprises
- ◆ Able to contribute to real-world business outcomes, not just technical tasks

This model directly enhances:

- ◆ Employability outcomes
- ◆ Industry partnerships
- ◆ Placement quality in product and GCC ecosystems
- ◆ Institutional ranking and differentiation

7. TRANSFORMATION AGENDA

The Department aims to:

- ◆ Elevate industry–institution partnerships into strategic value-creation engagements
- ◆ Build AI-enabled, future-ready and industry-relevant talent
- ◆ Strengthen innovation, applied research and intellectual property creation
- ◆ Promote industry-integrated learning and experiential education
- ◆ Accelerate research commercialisation and technology transfer
- ◆ Enhance faculty industry engagement, consultancy and thought leadership
- ◆ Strengthen institutional brand recall and industry visibility
- ◆ Build long-term strategic partnerships across AI, GCC, Quantum and emerging technology ecosystems
- ◆ Enable students to understand industry domains, business processes and enterprise challenges
- ◆ Improve employability, workplace effectiveness and professional readiness
- ◆ Develop students as responsible engineers, innovators, researchers, entrepreneurs and value creators

8. INDUSTRY ALIGNMENT AND OUTCOME-BASED VALUE CREATION

At IARE, industry engagement is not treated as a standalone activity or a series of events. It is positioned as an integral academic strategy that strengthens Outcome-Based Education, supports Programme Educational Objectives, enhances Programme Outcomes and creates measurable value for students, faculty, industry and society.

We follow a structured **Industry Intelligence to Academic Impact Framework**.

8.1 Industry Intelligence and Competency Mapping

Industry requirements are continuously captured through structured interactions with employers, GCC & AI leaders, technology partners, alumni, professional bodies, startup founders and domain experts.

These insights are translated into priority competency areas such as Artificial Intelligence, cloud computing, cybersecurity, data engineering, product development, automation, quantum technologies, consulting, enterprise skills and professional communication.

The identified competencies are mapped to:

- ◆ Programme Educational Objectives
- ◆ Programme Outcomes
- ◆ Course Outcomes
- ◆ Curriculum enrichment initiatives

- ◆ Value-added programmes
- ◆ Certification pathways
- ◆ Internship and project opportunities
- ◆ Student training and professional development interventions

This ensures that academic initiatives remain relevant, responsive and aligned with evolving professional requirements.

8.2 Industry-Integrated Learning and Experiential Education

Students are provided with opportunities to apply classroom learning in real-world contexts through Industry courses, live projects, hackathons, industry mentoring, expert sessions, technical workshops, innovation challenges, corporate academies and certification programmes.

These experiences strengthen students' ability to:

- ◆ Apply engineering knowledge to real-world problems
- ◆ Analyse and solve complex engineering challenges
- ◆ Design innovative and sustainable solutions
- ◆ Use modern engineering and digital tools
- ◆ Work effectively in multidisciplinary teams
- ◆ Communicate professionally and ethically
- ◆ Understand industry practices, business contexts and societal needs
- ◆ Pursue self-learning and lifelong professional development

This directly contributes to Programme Outcome attainment and the development of industry-ready graduates.

8.3 Innovation, Research and Knowledge Transfer

ICKT promotes a continuum from learning to research, research to application and application to impact.

Industry challenges are leveraged to encourage applied research, proof-of-concepts, prototypes, patents, consulting assignments, startup initiatives and technology transfer. Focused engagement in Artificial Intelligence, GCCs, Quantum Computing and emerging technologies enables students and faculty to contribute to industry-relevant innovation.

The objective is to move from knowledge consumption to knowledge creation and from research output to measurable technological, economic and societal impact.

8.4 Stakeholder Value Creation

The framework is designed to create value across the academic ecosystem.

For Students: Industry-relevant competencies, professional exposure, enhanced employability, innovation capability, certifications, career readiness and confidence to create value from Day One.

For Faculty: Industry exposure, curriculum enrichment, faculty development, collaborative research, consultancy, innovation opportunities and Thought leadership.

For Industry: Access to a capable talent pipeline, academic expertise, innovation support, collaborative problem-solving and opportunities for long-term strategic engagement.

For the Institution: Stronger Programme Outcome attainment, improved placement and progression outcomes, enhanced research and innovation performance, sustained industry relevance and institutional distinction.

8.5 Measurement, Review and Continuous Improvement

Every major industry engagement initiative is reviewed through measurable performance indicators, including:

- ◆ Student participation and completion rates
- ◆ Internship participation and conversion
- ◆ Certification enrolment and completion
- ◆ Industry project outcomes
- ◆ Placement and career progression outcomes
- ◆ Employer and alumni feedback
- ◆ Faculty industry engagement
- ◆ Research, patent and innovation outcomes
- ◆ Startup and technology transfer outcomes
- ◆ Growth in strategic industry partnerships

The evidence generated is systematically used to refine academic planning, training interventions, curriculum enrichment, student support systems and future collaboration priorities.

 **Closed-loop process: Plan → Implement → Assess → Improve**

The framework reinforces IARE's commitment to continuous quality improvement and Outcome-Based Education.

9. KNOWLEDGE TRANSFER PHILOSOPHY

"Learning gives creativity, creativity leads to thinking, thinking provides knowledge, and knowledge makes you great." — **Dr. A. P. J. Abdul Kalam**

ICKT is built on the belief that learning should lead to innovation, innovation should create research opportunities, and research should ultimately generate industry and societal impact.

 **Learn → Research → Apply → Commercialise → Impact**

Industry Drives Research

Organisations face business, technology and engineering challenges that require research-based solutions. Through collaborative research, consulting engagements, industry projects and innovation challenges, IARE can contribute directly to solving real-world problems.

Research Drives Industry

Research discoveries, inventions and innovations generated within academia can be transformed into products, services, startups, technologies and intellectual property that create economic and societal value.

10. END-TO-END KNOWLEDGE CREATION AND UTILISATION MODEL

Learning: Industry-integrated learning, professional certifications, capability development and exposure to contemporary technologies.

Research: Generation of new knowledge, innovations, patents, intellectual property and research outputs.

Application: Pilot projects, proof-of-concepts, translational research, prototypes and industry validation.

Commercialisation: Technology transfer, startup incubation, licensing, consulting and industry adoption.

11. INDUSTRY CERTIFICATION ACCELERATOR

Industry certification is no longer optional; it has become an important benchmark of professional readiness and a differentiator in competitive recruitment environments. **Industry Certification Accelerator** designed to encourage students to pursue industry-recognised certifications, professional courses and industry coaching initiatives that complement their academic learning.

Company	Key Student Programs	Timeline	Apply Link
Google	Google Summer of Code (GSoC), Google Developer Student Clubs (GDSC), Google Cloud Skills Boost	December	summerofcode.withgoogle.com
Microsoft	Microsoft Learn, Microsoft Learn Student Ambassadors, Azure Training Programs	Year-Round	studentambassadors.microsoft.com
AWS	AWS Academy, AWS Educate, AWS Skill Builder	Year-Round	aws.amazon.com/training
IBM	IBM Skills Build, IBM Z Student Programs, IBM AI Learning Paths	Year-Round	skillsbuild.org
ServiceNow	ServiceNow University, Virtual Internship Program (VIP), CSA Certification Pathways	8th July	sl1nk.com/y0aawb4
Salesforce	Trailhead, Salesforce Academic Alliance, AI & CRM Learning Programs	Year-Round	trailhead.salesforce.com
Oracle	Oracle Academy, Oracle Cloud Infrastructure Learning	Year-Round	academy.oracle.com
SAP	SAP Learning Hub Student Edition, SAP University Alliances	Year-Round	learninghub.sap.com
Cisco	Cisco Networking Academy, Cybersecurity & Networking Certifications	Year-Round	netacad.com
Red Hat	Red Hat Academy, Linux & Open-Source Training	Year-Round	redhat.com/academy
NVIDIA	Deep Learning Institute (DLI), AI & GPU Computing Programs	Year-Round	nvidia.com/training
Intel	Intel AI for Youth, One API Learning Programs	Year-Round	intel.com/aiforyouth
Adobe	Adobe Digital Academy, Creative & Experience Cloud Learning	Year-Round	adobe.com/digital-academy
Siemens	Siemens Mechatronics & Digital Industries Training	Year-Round	siemens.com/smscp
Dassault Systèmes	3DEXPERIENCE Edu, CAD/CAM Student Programs	Year-Round	3ds.com/edu
Qualcomm	Primer and Fundamentals of Cellular Communication & 5G	Year-Round	academy.qualcomm.com
Snowflake	Data & AI	Year-Round	snowflake.com/learn
Bentley Systems	STAAD /Infrastructure & Civil Design/Sustainability Toolkit	Year-Round	bentley.com/education/edu-resources/learn
Auto-Desk	Autodesk Certified Professional (ACP) in Civil 3D	Year-Round	autodesk.com/education/home

12. KEY MILESTONES ACHIEVED

ICKT has laid a strong foundation for IARE's Industry–Academia Transformation journey by engaging senior leaders from Global Capability Centers, Artificial Intelligence, Quantum Computing and emerging technology organisations.

The Department has created momentum towards establishing IARE as a preferred destination for industry collaboration, future skills development, innovation, research and talent transformation.

22 Industry Expert Sessions	58+ Hours of Engagement	2,500+ Students Benefited	4 GCC Students Placed
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AI-First Ecosystem

- ◆ **Strategic engagement initiated with** Adya.ai, Deep Station, Utsuk Consulting, SAP, Google and Qualcomm
- ◆ AI awareness initiatives and industry-led sessions conducted
- ◆ Foundation established for AI-enabled learning, innovation and capability development

GCC Innovation Gateway

- ◆ **Successful placement and** onboarding of four students at Cohere Health GCC, validating the Institute's GCC talent strategy
- ◆ Structured GCC engagement framework established
- ◆ Enterprise and consulting ecosystem interactions initiated
- ◆ GCC-focused talent, innovation and professional readiness pathways under development

Quantum Computing Ecosystem

- ◆ **Strategic** MoU established with Quinfosys
- ◆ Industry consulting engagement initiated
- ◆ IBM Quantum ecosystem interactions initiated
- ◆ Faculty awareness and capability-building programmes conducted

Industry-Integrated Learning

- ◆ 22 industry and expert sessions conducted
- ◆ More than 58 hours of industry engagement delivered
- ◆ Over 2,500 students benefited

IARE TECHX – GCC AI Summit 2026

- ◆ **Successful institutional platform bringing together** GCC leaders, AI experts, entrepreneurs, researchers, faculty and students
- ◆ Enhanced institutional visibility, industry engagement and thought leadership
- ◆ Strengthened the foundation for future strategic collaborations



Panel Session — GCC AI Summit 2026



Innovation & Startup Expo — TechX 2026

Industry Partnership and Global Network

- ◆ Expanding engagement across AI companies, GCCs, consulting organisations, research institutions, startups and technology enterprises
- ◆ Building a strong network of industry leaders committed to shaping the next generation of engineers, innovators, researchers and technology professionals

13. ROADMAP 2030

BUILDING THE HUMAN + AI ADVANTAGE

The future will not belong to those who know more. It will belong to those who can learn faster, innovate continuously, work alongside AI and create value at scale.

By 2030, IARE will evolve from producing graduates to developing a new generation of knowledge professionals, innovators, researchers and technology leaders capable of driving enterprise transformation in an AI-powered world.

TALENT — From Degrees to Capability

- ◆ AI-Augmented Talent
- ◆ GCC and Enterprise Workforce Readiness
- ◆ Industry Credentials and Global Certifications
- ◆ Domain Intelligence and Business Acumen
- ◆ Product, Consulting and Leadership Skills
- ◆ Professional Communication and Workplace Effectiveness

INNOVATION — From Learning to Building

- ◆ AI Innovation Labs and Centres of Excellence
- ◆ Industry Challenges and Innovation Sprints
- ◆ Product Development and Startup Ecosystems
- ◆ Real-World Problem Solving
- ◆ Innovation as a Core Graduate Attribute

RESEARCH — From Knowledge Consumption to Knowledge Creation

- ◆ Industry-Sponsored Research
- ◆ AI, Quantum and Emerging Technology Research
- ◆ Joint Industry Research Centres
- ◆ Patents, Intellectual Property and Technology Transfer
- ◆ Commercialisation-Driven Research

PARTNERSHIPS — From Engagement to Co-Creation

- ◆ Strategic Industry Collaborations
- ◆ Global Technology Alliances
- ◆ GCC Leadership Network
- ◆ Corporate Academies
- ◆ Industry-Led Learning Ecosystems
- ◆ Faculty and Industry Co-Innovation Platforms

IMPACT — From Employability to Value Creation

- ◆ Industry-Ready Value Creators
- ◆ AI-Enabled Workforce
- ◆ Innovation and Startup Outcomes
- ◆ Commercialised Research and Intellectual Property
- ◆ National Influence and Global Recognition
- ◆ Sustainable Academic and Industry Impact

14. FUTURE OF WORK 2030+

By 2030 and beyond, the landscape of work will not just *evolve*—it will be fundamentally re-architected. The biggest shift is that roles will move from “task execution” to “systems thinking with AI,” where humans supervise, design, and orchestrate intelligent ecosystems rather than perform isolated functions.

Below is a structured view of future roles and technologies shaping 2030+, designed from an industry and employability perspective.

Future of Roles & Technologies (2030 and beyond)

14.1 AI-Native Professional Roles (Human + AI Collaboration Layer)

By 2030, almost every role becomes AI-augmented. New roles emerge not around coding alone, but around *controlling intelligence systems*.

Key Future Roles:

- ◆ **AI Orchestration Specialist** — Designs workflows where multiple AI systems (LLMs, agents, automation bots) work together.
- ◆ **Prompt & Context Engineer (Evolved into "AI Interaction Architect")** — Not just prompting—but designing structured intelligence behaviour.
- ◆ **Human-AI Decision Auditor** — Validates decisions made by AI in finance, healthcare, law, and governance.
- ◆ **AI Behaviour Trainer** — Trains enterprise AI systems using real-world feedback loops.

Technologies Driving This Layer:

- ◆ Large Language Models (LLMs) → multimodal AI
- ◆ Autonomous AI agents (agentic workflows)
- ◆ AI governance platforms
- ◆ Explainable AI (XAI)

14.2 Industry Domain Fusion Roles (Tech + Business + Domain)

Future professionals will not be "software engineers" alone - they will be domain technologists.

Key Roles:

- ◆ **BFSI AI Strategist** — Builds fraud detection + credit intelligence systems.
- ◆ **Healthcare Intelligence Designer** — AI-driven diagnostics, predictive health systems.
- ◆ **Retail Experience Architect** — Designs hyper-personalized shopping ecosystems using AI + AR.
- ◆ **Insurance Risk Simulation Engineer** — Uses AI + digital twins for risk forecasting.

Core Shift: From "IT services" to "Industry intelligence engineering"

Technologies: Digital Twins, Predictive AI analytics, Edge AI in devices, Industry-specific LLMs

14.3 Autonomous Systems & Agent Economy

One of the biggest transformations is the rise of AI agents that perform end-to-end tasks independently.

Future Roles:

- ◆ Autonomous Systems Engineer
- ◆ Multi-Agent Workflow Designer
- ◆ AI Supply Chain Controller
- ◆ Robotic Fleet Supervisor (Drones, Warehouses, Smart cities)

Technologies: Agentic AI systems, Robotics process autonomy (beyond automation), Swarm intelligence systems, IoT + Edge + 5G/6G networks

14.4 Deep Tech & Frontier Engineering Roles

Beyond mainstream IT, deep science will enter industry-scale adoption.

Key Roles:

- ◆ Quantum Algorithm Developer
- ◆ Quantum Security Architect
- ◆ Biotech Computing Engineer
- ◆ Neuro-Computing Interface Designer

Technologies: Quantum Computing (IBM, Google Quantum initiatives), Brain–Computer Interfaces (BCI), Synthetic biology computing, Nanotech systems

14.5 Global Capability Center (GCC) 2.0 Roles

India is becoming the global nerve center for GCCs of Fortune 500 companies. By 2030, GCCs will move from support hubs to innovation engines.

Future Roles:

- ◆ GCC Innovation Lead
- ◆ Global Product Co-creator
- ◆ AI Transformation Consultant
- ◆ Enterprise Data Sovereignty Architect

Shift: From "outsourced execution" to "global product ownership"

15. 2030 ASPIRATION

To position IARE as a leading Future-Ready Talent, Innovation and Research Ecosystem at the convergence of Artificial Intelligence, Global Capability Centers, Quantum Computing and Emerging Technologies.

IARE will empower students to create intellectual, technological, economic and societal value as innovators, entrepreneurs, researchers and globally competent professionals.

CLOSING NOTE

Every meaningful partnership begins with a shared purpose.

This handbook reflects IARE's commitment to creating an ecosystem where academia, industry, research, innovation, and entrepreneurship work together to generate lasting value. As technologies evolve and industries transform, our focus will remain constant—to strengthen collaborations that enrich learning, advance knowledge, and create opportunities for future generations.

The journey of Industry Collaborations & Knowledge Transfer is continuous. Every collaboration today lays the foundation for tomorrow's innovation.

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