



IARE
INSTITUTE OF
AERONAUTICAL ENGINEERING



NATIONAL
INSTITUTIONAL
RANKING
FRAMEWORK

ENGINEERING
CATEGORY
RANK 151-200

NAAC
ACCREDITATION

A++
GRADE

26
YEARS
OF EXCELLENCE

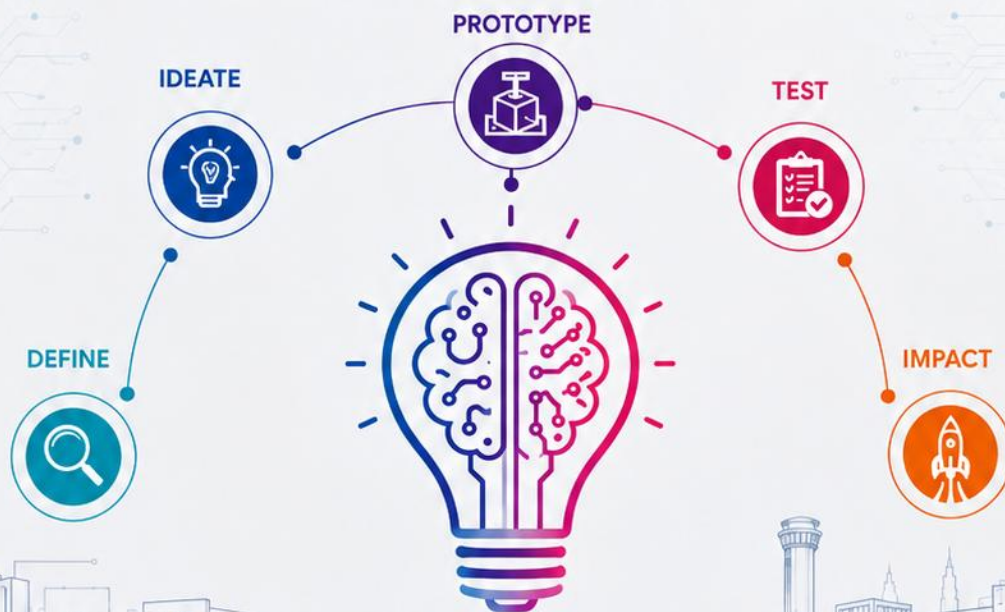
• TEACHING INNOVATIONS AND PEDAGOGICAL SUPPORT •

IARE HACKVERSE

FROM IDEAS TO IMPACT

Innovation • Problem Solving • Prototyping • Technology-Driven Creativity

THE INNOVATION JOURNEY



HACKATHON GUIDELINES

2026-27

A Campus-Wide Hackathon & Innovation Journey



COLLABORATE



INNOVATE



BUILD



PRESENT



TRANSFORM

Think Beyond the Code. Start with a Problem. **Build with Purpose.**

Foreword

Innovation begins the moment someone looks at an existing problem and asks a simple, powerful question:

"Can we solve this differently?"

IARE HACKVERSE is envisioned as a platform where students move beyond conventional learning and experience the **complete innovation journey** — from identifying a problem, to developing an idea, building a prototype, testing it, receiving feedback and presenting a solution.

A hackathon is not simply a coding competition. It is an environment for **creative thinking, engineering, experimentation, teamwork and rapid execution**. Through HACKVERSE, students from every engineering background can explore problems across technology, aerospace, civil infrastructure, sustainability, healthcare, robotics, AI, data, electronics, manufacturing, entrepreneurship and society.

The objective is simple:

Don't Just Imagine. Prototype.

About these Hackathon Guidelines

These guidelines are designed as a practical guide — an **IARE innovation playbook** rather than a conventional academic regulation document. It explains what a hackathon is, how to participate, how to organize one, how to develop a solution, and what can happen after the event.

Who it is for

- **Students** — developers, engineers, designers, researchers and innovators.
- **Faculty coordinators & mentors** — who guide, challenge and accelerate student teams.
- **Judges & organisers** — who plan, run and evaluate each edition.
- **Industry experts & researchers** — who bring real problems and practical perspective.

How to read it. These guidelines move from understanding hackathons, through the HackVerse universe and the team journey, into responsible innovation and finally the IARE-specific operating model — complete with ready-to-use templates, checklists and forms.

Understanding Hackathons

What a hackathon really is, why they matter, and what HackVerse means

1. What is a Hackathon?



Figure 1. A HackVerse build session — students turning ideas into working prototypes under time pressure.

Hackathon = HACK + MARATHON. The word combines two ideas: the creative, experimental spirit of a “hack” and the sustained, time-bound endurance of a “marathon.”

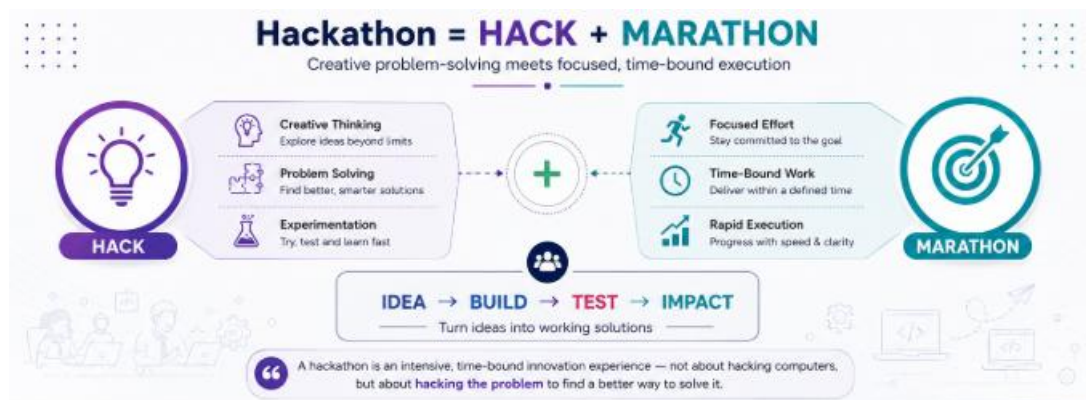


Figure 2. A hackathon fuses creative problem solving with focused, time-bound execution.

HACK — the creative half

- Creative problem solving and innovative thinking
- Experimentation and rapid building
- Finding smarter approaches and challenging existing assumptions

MARATHON — the disciplined half

- Sustained effort and focus
- Time-bound execution and team endurance
- Rapid, visible progress

An intensive, time-bound innovation experience where people come together to identify problems, generate ideas, build solutions, test prototypes and present outcomes.

A hackathon **does not** mean hacking computers or cybersecurity. The “hack” is about **hacking the problem** — finding a better way to solve it.

Quick insight. *A hackathon is not about building everything. It is about building enough to prove that an idea can work.*

2. Why Do We Need Hackathons?

Traditional learning often follows a single path — **Theory** → **Practice**. Hackathons introduce a second, powerful pathway:

PROBLEM → IDEA → PROTOTYPE → DEMO → IMPACT

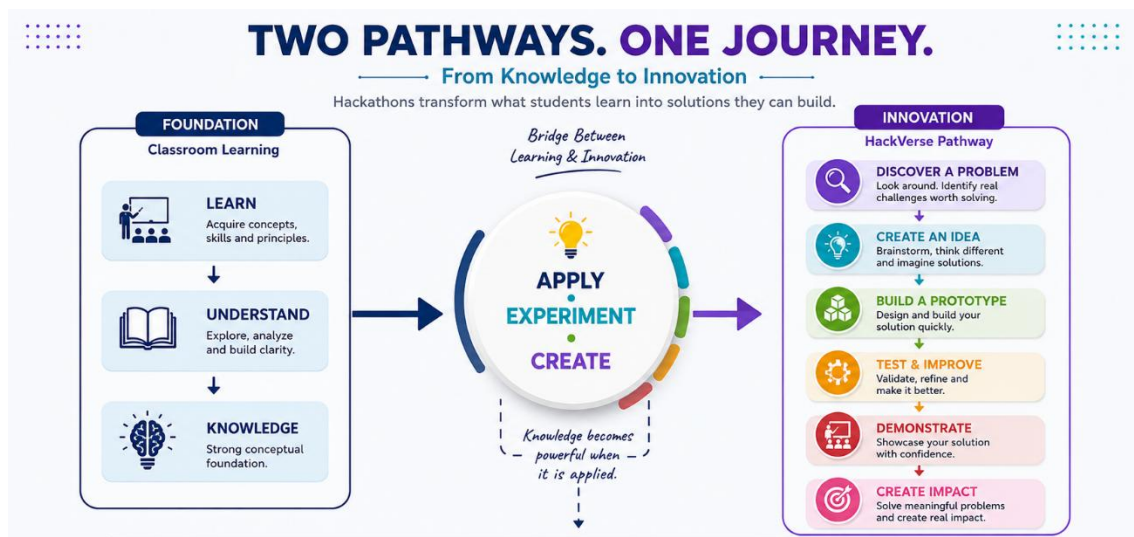


Figure 3. Hackathons add a problem-first route that turns knowledge into applied capability.

What students develop

Capability	What the student learns
Problem Solving	Identify root causes, not just symptoms.
Creativity	Generate unconventional ideas.
Innovation	Convert ideas into working solutions.
Teamwork	Work with people of different skills.
Technical Skills	Build functional solutions.
Communication	Explain complex ideas simply.
Leadership	Coordinate people and tasks.
Prototyping	Build quickly and test.
Industry Exposure	Understand real-world problems.

Capability	What the student learns
Entrepreneurship	Think about users and markets.
Research	Explore evidence and technologies.
Confidence	Present and defend ideas.

Hackathon insight. *Learning becomes powerful when students have a real problem worth solving.*

3. What is HackVerse?

HackVerse = the complete innovation ecosystem. HackVerse is not merely the name of a competition. It represents the entire environment in which students discover, define, ideate, build, test, pitch and create impact.

The HackVerse journey runs through seven connected movements — **Discover** → **Define** → **Ideate** → **Build** → **Test** → **Pitch** → **Impact**.

HACKVERSE IS A JOURNEY, NOT JUST A COMPETITION.

4. What Happens in a Hackathon? — The Seven-Stage Lifecycle



Figure 4. The seven-stage hackathon lifecycle every HackVerse team travels.

- 1. Discover** — find a meaningful problem worth solving.
- 2. Define** — clarify what the problem is, who faces it, why it matters and what gap exists.
- 3. Ideate** — generate multiple possible solutions.
- 4. Build** — convert the selected idea into a concept, design, MVP and prototype.
- 5. Test** — check whether the solution actually works.
- 6. Pitch** — explain the problem, solution, innovation, demo and impact.

7. **Impact** — explore what happens next: deployment, research, patent, startup, industry collaboration or open source.

The HackVerse Universe

Types of hackathons, the theme universe, generative AI, participants and teams

5. Types of Hackathons

HackVerse should not define hackathons only by department. Classify them instead by purpose, technology, problem and experience.



Figure 5. Hackathons are best classified by purpose, technology and the problem/experience they target.

Type	What it is	Students may build	Skills
Technology	Broad technology challenge	Digital solution	Software / Engineering
AI	AI-based problem solving	Prediction / classification system	ML / AI
Generative AI	Creation using GenAI	AI assistant / content tool	LLM / Prompting
Agentic AI	Autonomous AI workflows	AI agent	Agents / Automation
Data	Data-driven solutions	Analytics / prediction platform	Data Science
Cybersecurity	Digital security	Security tools	Cybersecurity
IoT	Connected physical systems	Smart device	Sensors / Cloud
Robotics	Automated machines	Robot / prototype	Robotics
Aerospace	Aviation / aerospace challenges	UAV / aviation solution	Aerospace
Drone / UAV	Drone applications	Inspection / surveillance system	UAV
Design	Human-centred innovation	UI / product design	UX

Type	What it is	Students may build	Skills
Social Impact	Social problems	Community solution	Design / Impact
Sustainability	Environmental problems	Green technology	Sustainability
Industry	Real business problem	Industry PoC	Engineering
Research	Research challenge	Experimental prototype	Research
Startup	Business opportunity	MVP / business model	Entrepreneurship
Open Innovation	Open-ended	Any meaningful solution	Multidisciplinary
Engineering & Infrastructure	Civil, mechanical, electrical, electronics and interdisciplinary engineering solutions	Infrastructure / structural / mechanical solution	Civil / Mechanical / Electrical / Electronics
Sustainable Engineering	Energy, water, materials, waste, climate and resource-efficiency challenges	Sustainable design / green solution	Sustainability / Engineering

Three Hackathon Segments

At the broadest level, every HackVerse challenge falls under one of three segments.

Segment	What it covers
Coding Hackathons	Problem-solving, competitive programming and industry-oriented coding challenges that strengthen students' programming, algorithmic thinking and technical problem-solving skills.
Prototype Hackathons	Innovation, design, development and demonstration of working prototypes that address real-world problems through technology and creative solutions.
Sustainability Hackathons	Innovation and technology-driven solutions addressing environmental, social and resource-efficiency challenges such as energy conservation, water management, waste reduction, renewable energy, sustainable mobility and social impact, with emphasis on creating measurable and scalable impact.

Segment-wise Example

Segment	Example flow
Coding	Smart Classroom Allocation → Algorithm → Code → Test → Submit → Evaluate → Winner
Prototype	Smart Campus Resource Finder → Design → Develop → Prototype → Demo → Evaluate → Winner
Sustainability	Smart Energy Management → Identify Wastage → Build Solution → Measure Savings → Demo → Evaluate → Winner

6. The IARE Hackathon Theme Universe

IARE HackVerse should be deliberately larger than CSE, AI or software development alone.



Figure 6. The HackVerse theme universe spans more than twenty innovation areas across every discipline.

Because IARE has multiple engineering disciplines, HackVerse can encourage students to examine the **same problem from different engineering perspectives**.

The theme universe also spans engineering-oriented areas including Smart Infrastructure, Construction Technology, Water & Environmental Systems, Energy & Power Systems, Smart Mobility, Advanced Manufacturing, Digital Engineering, Structural / Infrastructure Monitoring, Sustainable Materials, Industrial Automation and Assistive Engineering, alongside the technology and AI-led themes shown below.

Example problem: *Smart campus energy management.*

Possible solutions: AI prediction • IoT sensors • electrical energy monitoring • building design • dashboard • mobile application • digital twin • sustainability model. That is the true spirit of HackVerse.

Example problem: *Smart campus water & infrastructure management.*

Possible solution directions: IoT-based monitoring • water demand forecasting • rainwater harvesting optimization • GIS mapping • infrastructure condition monitoring • predictive maintenance • digital twin • AI-based forecasting • sustainable materials • resource-efficiency solutions. These are example directions, not mandatory technologies.

7. Generative AI in Hackathons

AI is the co-pilot. The student remains the problem solver.

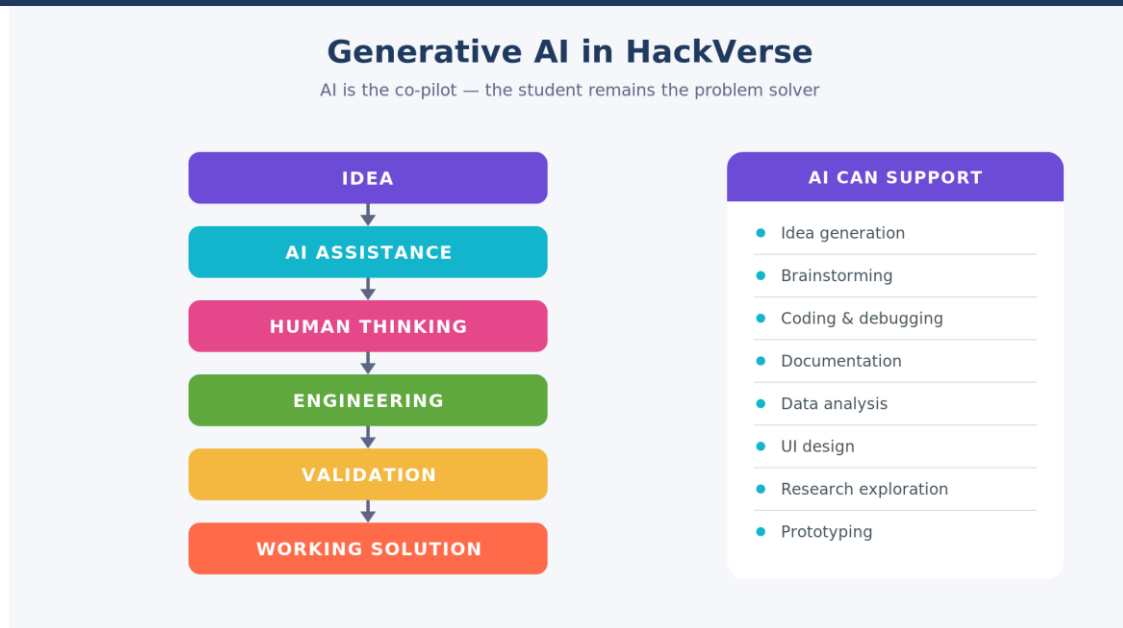


Figure 7. Generative AI accelerates the journey — but human thinking, engineering and validation remain central.

Generative AI can support idea generation, brainstorming, coding, debugging, documentation, data analysis, UI design, research exploration, content creation and prototyping. Tools include ChatGPT, Gemini, Claude, GitHub Copilot, Cursor, large language models, RAG systems, AI agents and multimodal or text-to-code systems.

Important principle. *AI can accelerate the journey. It cannot replace understanding.*

Students should always be able to explain what they built, why they built it, how it works, what data was used, what AI contributed and what limitations exist.

8. Who Can Participate?

HackVerse brings together a broad community of contributors:

Participant	Role in HackVerse
Students	Developers, engineers, designers, researchers and innovators.
Faculty	Domain mentors, technical mentors and problem experts.
Industry	Technology experts, product experts and industry mentors.
Researchers	Subject-matter experts and research advisors.
Entrepreneurs	Startup and business-model guidance.

Recommended team size: 2–4 students per team

For multidisciplinary challenges, mixed teams should be **encouraged** — but not every hackathon needs to make interdisciplinary participation mandatory.

9. The HackVerse Team

A team can contain many roles — and one student may perform several of them.

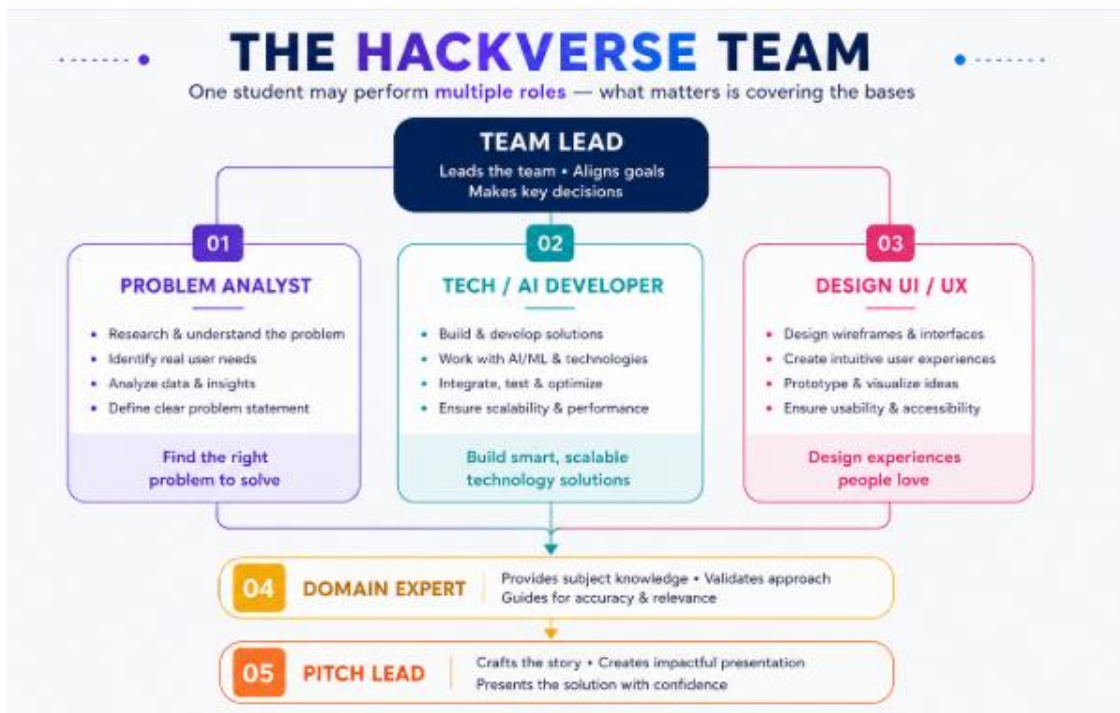


Figure 8. A balanced HackVerse team covers problem analysis, build, design, domain knowledge and the pitch.

Role	Responsibility
Team Lead	Coordinates the team and keeps momentum.
Problem Analyst	Understands users and requirements.
Developer	Builds the software.
AI / ML Engineer	Develops intelligent models.
Data Analyst	Works with datasets and insights.
UI / UX Designer	Designs the user experience.
Hardware Engineer	Builds physical systems.
Domain Expert	Provides subject-matter knowledge.
Business / Pitch Lead	Explains value, impact and scalability.

One student may perform multiple roles — what matters is that the team covers the bases.

The Hackathon Journey

From registration to impact — formats, problem statements, prototyping, mentoring and judging

10. From Registration to Impact



Figure 9. The complete team journey — the hackathon does not end when the winners are announced.

The philosophy. *The hackathon does not end with the announcement of winners. The real success is when a promising idea continues after the event.*

Simple End-to-End Example

Problem Statement → Team Formation → Idea → Coding/Build → Test → Final Submission → Demo → Jury Evaluation → Winner → Further Development

A single, simple thread that any team can follow from the first brief to what happens after the trophy is handed out.

11. Hackathon Formats

Format	Duration	Suitable for
Mini Hackathon	4–6 hrs	Beginner / student activities
One-Day	8–12 hrs	Department-level events
24-Hour	24 hrs	Intensive prototyping
36-Hour	36 hrs	Advanced challenges
48-Hour	48 hrs	Complex prototypes
Online	Flexible	Wider participation
Offline	Fixed	Campus innovation
Hybrid / 2-Phase	Multiple stages	Idea → prototype model

12. Creating a Problem Statement

A great hackathon starts with a great problem.

A strong problem statement is clear, relevant, specific and meaningful — open enough for creativity, yet narrow enough for focused development.

Version	Problem statement
Too broad	Build an AI application.
Much better	Develop an AI-assisted system that helps students identify common academic learning gaps using anonymised learning data.

The improved version makes the **user, problem, context and technology opportunity** far clearer.

Standard problem statement template

Field	What to write
Problem ID	e.g. HV-2026-01
Title	e.g. Smart Campus Energy Optimization
Background	Describe the context.
Problem	What exactly needs to be solved?
Target Users	Who experiences the problem?
Existing Gap	Why are current solutions insufficient?
Expected Solution	What type of outcome is expected?
Constraints	Technical, financial, environmental or operational limits.
Available Data	Datasets / APIs / resources.
Technology Suggestions	Optional technologies.
Expected Deliverable	Prototype / MVP / dashboard / device / etc.
Impact	What improvement should the solution create?

13. Idea to Prototype

From Idea to Prototype

Don't build the final product — build enough to prove the idea



Figure 10. From a real problem to a demonstrable prototype — each step adds maturity.

Stage	Meaning
Idea	A possible solution.
Concept	A structured explanation of how the idea will work.
MVP	Minimum Viable Product — the simplest version that demonstrates useful value.
Prototype	A working or demonstrable representation of the solution.
Product	A mature solution for real users, deployment and sustained use.

HackVerse principle. *Don't try to build the final product in a hackathon. Build enough to prove the idea.*

14. Mentoring



Figure 11. Mentors accelerate learning by asking the right questions — not by building the project.

Mentors are not there to build the project for students. Their role is to **ask the right questions, challenge assumptions and accelerate learning.**

Five Mentor Checkpoints



Figure 12. Five structured mentor checkpoints guide every team from problem identification to a validated solution and final pitch.

The mentor pool

Faculty • industry experts • researchers • startup founders • technology specialists • domain experts
• product designers.

Typical mentor questions

Focus	The question a good mentor asks
Problem	Is this really a problem?
User	Who will actually use your solution?
Innovation	What is genuinely new here?
Technology	Why did you choose this technology?
Validation	What evidence shows that it works?
Impact	What changes if your solution succeeds?

15. Judging & Evaluation

The proposed 100-mark HackVerse evaluation framework.

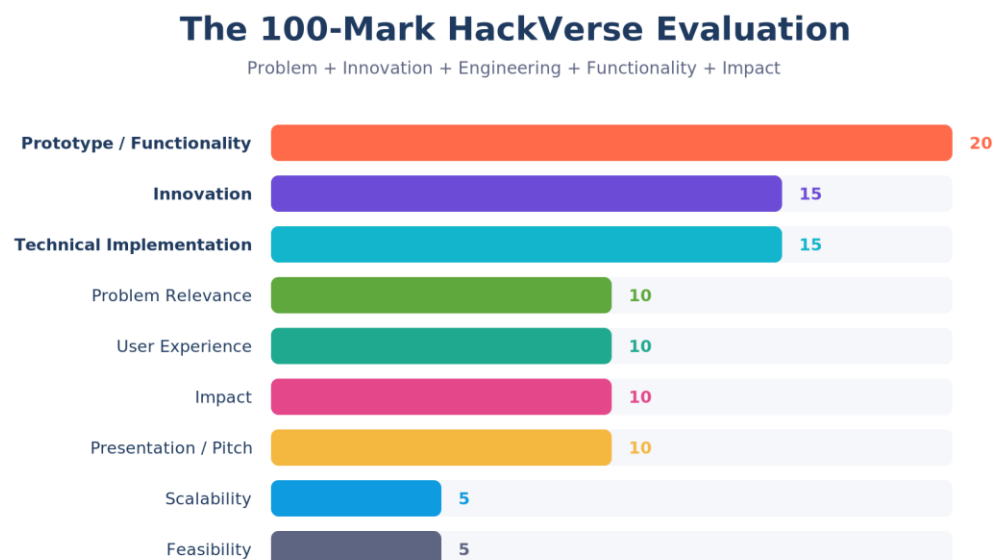


Figure 13. The 100-mark evaluation rewards a balance of problem, build and impact — not technology alone.

Criterion	Marks
Problem Relevance	10
Innovation	15
Technical Implementation	15
Prototype / Functionality	20
User Experience	10
Impact	10
Scalability	5
Feasibility	5

Criterion	Marks
Presentation / Pitch	10
TOTAL	100

Evaluation philosophy. A project should not win simply because it contains advanced technology. The winning solution demonstrates Problem + Innovation + Engineering + Functionality + Impact. Judges receive the criteria before judging, with clear expectations around relevance, practicality, technical quality and presentation.

Safety, sustainability and responsible engineering practices may be considered within Technical Implementation, Feasibility and Impact, where applicable.

Evaluation Framework Example

Departments may also adapt the following weightage model as an alternative evaluation example, provided the total remains 100%.

Criteria	Weightage
Problem Understanding & Relevance	15%
Innovation & Creativity & Research	15%
Technical Implementation	20%
Working Solution / Functionality	20%
Impact & Usefulness	15%
Feasibility & Scalability	5%
Presentation & Demonstration	10%
Total	100%

16. The Five Questions Every Team Must Answer

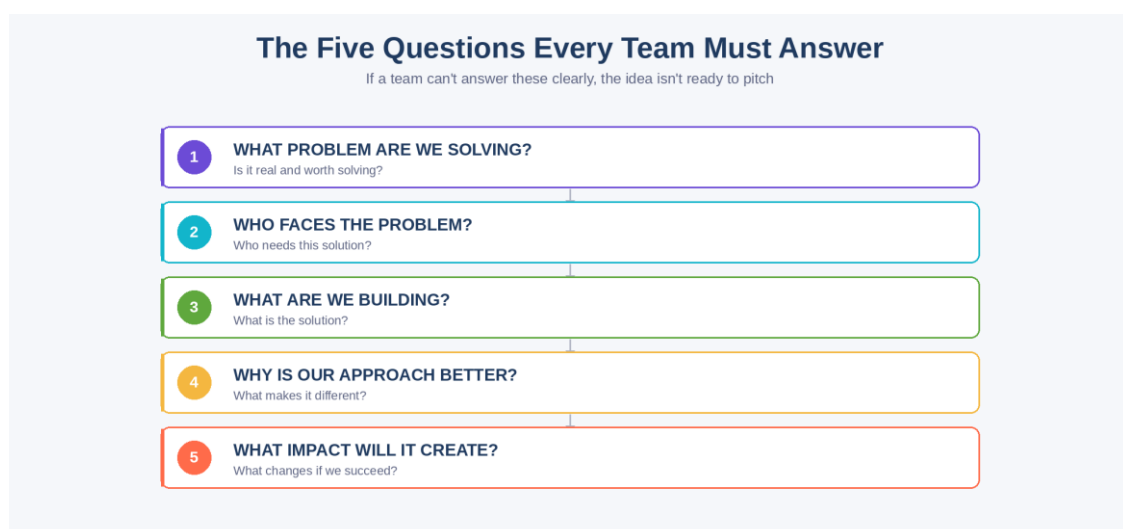


Figure 14. Every team should be able to answer these five questions before the final pitch.

If a team cannot answer these five questions clearly, the idea is not yet ready for the final pitch.

Responsible Innovation

Responsible innovation, generative-AI guidelines and the rules of the game

17. Responsible Innovation & Technology Use

Hackathon ≠ illegal hacking. Innovate responsibly. Build safely. Use technology ethically.

Participants must respect cyber ethics, data privacy, copyright, intellectual property, open-source licences, academic integrity, user consent and safety.

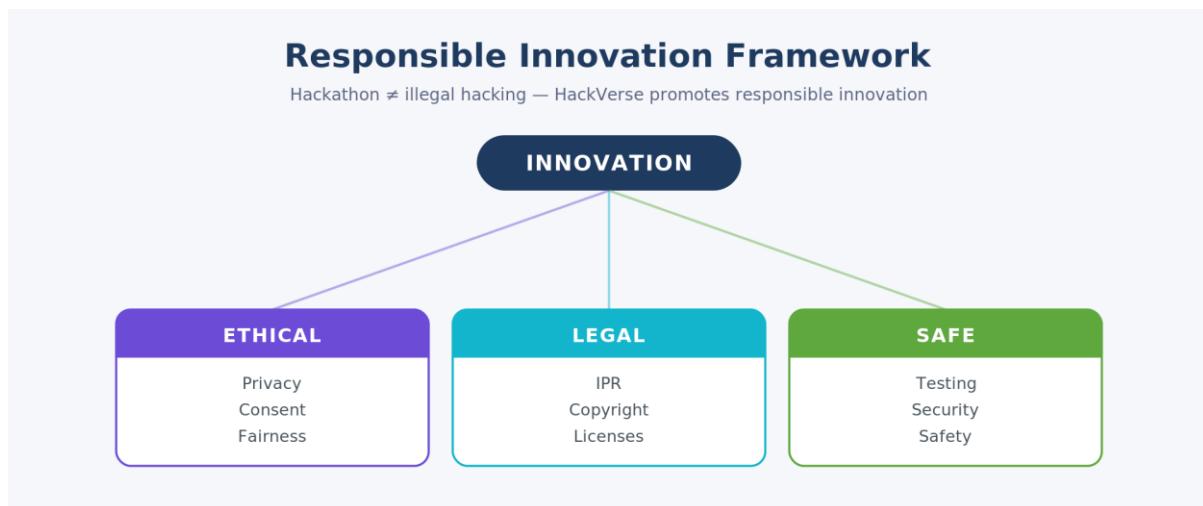


Figure 15. Responsible innovation stands on three pillars: ethical, legal and safe.

HackVerse follows a clear code of conduct with a reporting mechanism and a safe, respectful event environment for everyone.

18. Generative AI Guidelines

AI can help you — but AI cannot think for you.

AI may be used for

Brainstorming • idea generation • coding assistance • debugging • documentation • data analysis
• UI design • research assistance • prototype development.

Students must not

- Present AI-generated work as entirely their own without disclosure.
- Use confidential or private data improperly.
- Submit copied solutions.
- Use AI to fabricate experimental results.
- Violate software licences.
- Misrepresent AI-generated content as independently developed.

AI usage declaration

Item	Response
AI Tool Used	
Purpose	
Portion of Work Supported	
Human Validation Performed	
Final Responsibility	Team

AI is your co-pilot. You are the problem solver.

19. Hackathon Rules

1. **Originality** — the submitted solution should be the team's own work, or clearly identify any reused components.
2. **Team Size** — recommended 2–4 students.
3. **Submission Deadline** — all required deliverables must be submitted within the announced timeline.
4. **Technology Usage** — participants may use appropriate technologies unless restricted by the specific challenge.
5. **Open Source** — open-source components must comply with their applicable licences.
6. **AI Usage** — AI assistance must be disclosed.
7. **Repository** — source code should be submitted through the designated repository or platform where applicable.
8. **Demo** — every finalist should demonstrate a working prototype or a meaningful proof of concept.
9. **Academic Integrity** — plagiarism, fabricated data and misrepresentation are not acceptable.
10. **Safety** — hardware and software demonstrations must be conducted safely. Physical prototypes, electrical systems, mechanical systems, drones, tools and experimental setups must be operated only under appropriate safety conditions and supervision.
11. **IPR** — teams should understand ownership and disclosure implications before public demonstration. Teams are advised to consult the designated institutional IPR/research authority before public disclosure of potentially patentable ideas.
12. **Data Privacy** — personal, confidential or restricted data must not be used without appropriate authorisation.

Building & Presenting

The final submission, the five-minute pitch, and life beyond the hackathon

20. Final Submission

Every team should submit a complete package:

1. Project Title
2. Abstract
3. Problem Statement
4. Proposed Solution
5. Architecture
6. Technology Stack

7. Prototype
8. Source Code / Repository
9. Demo Video
10. Presentation
11. Impact Statement
12. AI Usage Declaration

21. The Final Pitch

The 5-Minute HackVerse Pitch

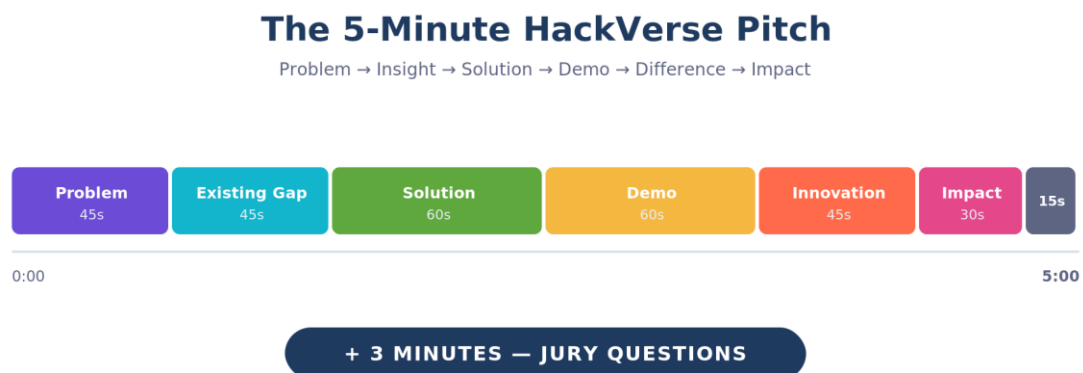


Figure 16. A tight five-minute pitch structure, followed by three minutes of jury questions.

Time	Content
45 sec	Problem
45 sec	Existing Gap
60 sec	Solution
60 sec	Demo
45 sec	Innovation
30 sec	Impact
15 sec	Closing
TOTAL	5 minutes

Followed by 3 minutes of jury questions.

Pitch formula: Problem → Insight → Solution → Demo → Difference → Impact.

Finish with one memorable sentence: ***"We built ____ to help ____ solve ____."***

22. Beyond the Hackathon



Figure 17. Demo day is a beginning, not an ending — strong ideas continue towards real impact.

Winning is not the end.

After the Hackathon — Winning Is Not the End

The goal is to identify ideas worth continuing beyond the event

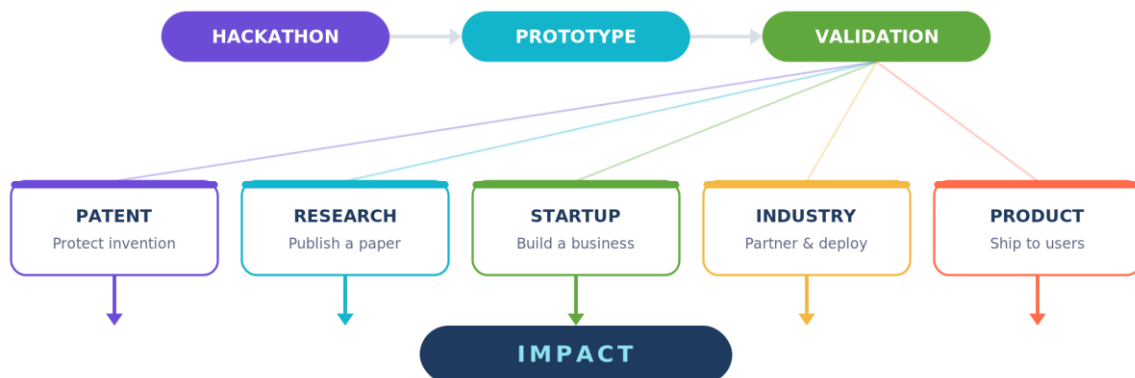


Figure 18. Validated prototypes can branch into patents, research, startups, industry projects and products.

Pathway	What it means
Patent	Protect a novel invention where appropriate.
Research Paper	Convert strong technical work into research.
Startup	Develop the idea into a business.
Industry Project	Partner with an organization.
Product	Move from prototype to a deployable solution.

Pathway	What it means
Open Source	Release appropriate technologies for community use.

IARE HackVerse

The institutional model, flagship tracks, department calendar, operating cycles and templates

23. The IARE HackVerse Ecosystem

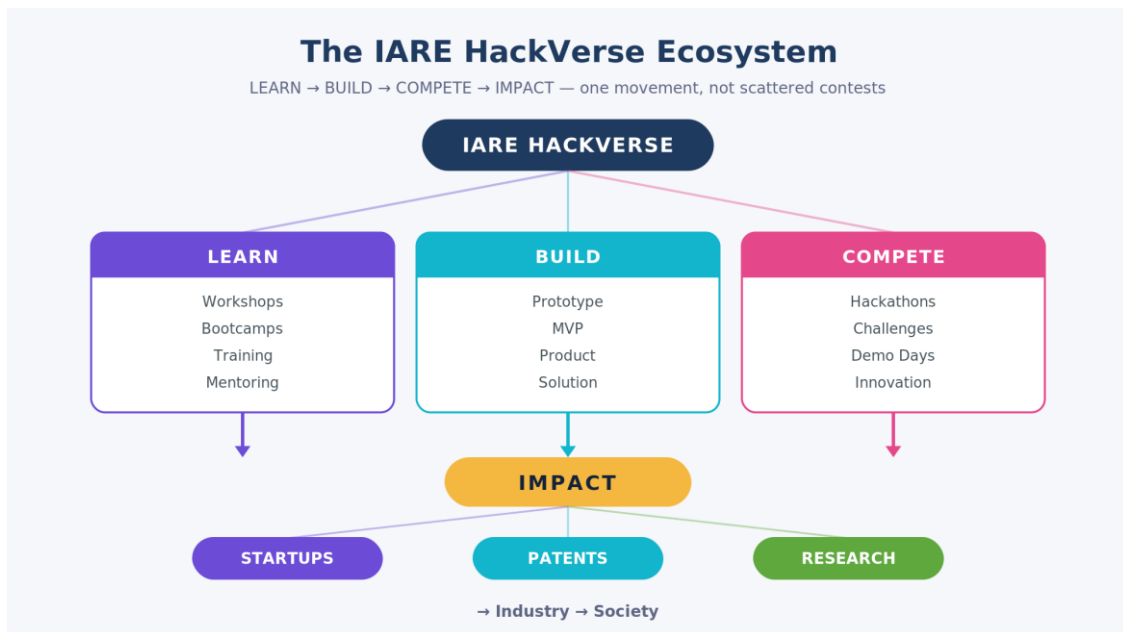


Figure 19. The IARE HackVerse ecosystem: Learn → Build → Compete → Impact.

LEARN → BUILD → COMPETE → IMPACT

This philosophy is far stronger than positioning the initiative simply as a series of competitions. It ties workshops, prototyping and contests to lasting outcomes — startups, patents, research, industry projects and social impact.

24. The IARE HackVerse Flagship Model

Under the HackVerse umbrella — “From Ideas to Impact” — individual editions can run different tracks.

Ten HackVerse Flagship Tracks

One scalable identity — “From Ideas to Impact” — across every edition

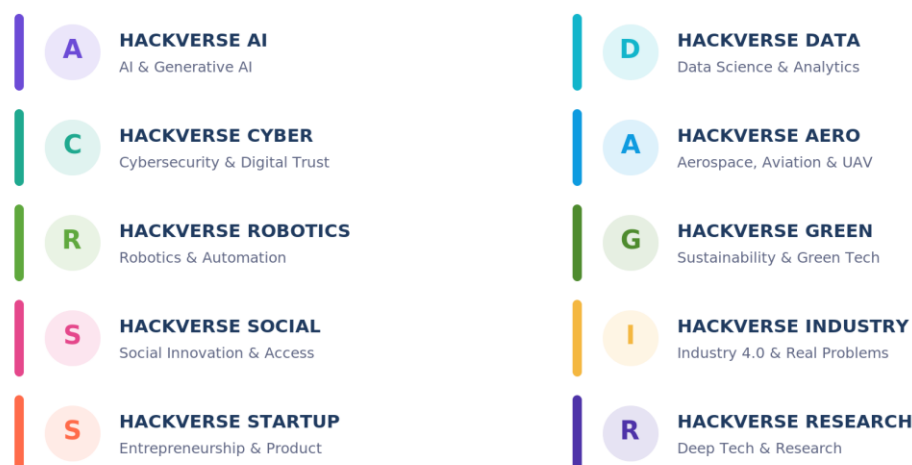


Figure 20. Ten flagship tracks sit under one scalable HackVerse identity.

Track	Focus area
HackVerse AI	Artificial Intelligence & Generative AI
HackVerse Data	Data Science & Analytics
HackVerse Cyber	Cybersecurity & Digital Trust
HackVerse Aero	Aerospace, Aviation & UAV
HackVerse Robotics	Robotics & Automation
HackVerse Green	Sustainability & Green Technology
HackVerse Social	Social Innovation & Accessibility
HackVerse Industry	Industry 4.0 & Real-World Problems
HackVerse Startup	Entrepreneurship & Product Innovation
HackVerse Research	Deep Tech & Research Innovation

25. IARE Department-wise HackVerse Model 2026–27

The official calendar establishes the **Department-wise Hackathon Series 2026–27**. Departments plan announcement, publicity, registration, mentoring and conduct, in collaboration with the TIPS Division. The Department-wise HackVerse Series will be conducted according to the approved institutional calendar issued by the TIPS Division; the schedule below is the current reference calendar.

Department	Flyer	Team Formation	Submission	Screening	Final Participants	Hackathon
CSE	21 Aug	24 Aug	31 Aug	02 Sep	07 Sep	11 Sep
CSE (Artificial Intelligence & Machine learning)	18 Sep	21 Sep	28 Sep	30 Sep	05 Oct	09 Oct
CSE (Data Science)	16 Oct	19 Oct	26 Oct	28 Oct	02 Nov	06 Nov

IT	20 Nov	23 Nov	30 Nov	02 Dec	07 Dec	11 Dec
Electronics and Communication	18 Dec	21 Dec	28 Dec	30 Dec	05 Jan	08 Jan
Electrical and Electronics Engineering						
Aeronautical	22 Jan	25 Jan	01 Feb	03 Feb	08 Feb	12 Feb
Mechanical Engineering	19 Feb	22 Feb	01 Mar	03 Mar	08 Mar	12 Mar
Civil Engineering						

Recommended communication model

Every edition should be branded IARE **HACKVERSE** | [DEPARTMENT / TRACK].

Edition	Tagline
IARE HackVerse — CSE Edition	Code. Create. Challenge.
IARE HackVerse — AI Edition	Build Intelligence. Create Impact.
IARE HackVerse — Aero Edition	Innovate Beyond the Sky.
IARE HackVerse — Civil Edition	Engineer Better. Build Sustainably.
IARE HackVerse — Mechanical Edition	Design Smarter. Engineer Better.
IARE HackVerse — Data Science Edition	Decode Data. Drive Insights.
IARE HackVerse — ECE Edition	Connect Smarter. Communicate Better.
IARE HackVerse — EEE Edition	Power Smarter. Power Tomorrow.

Department Coordination

The 2–3 Faculty Coordinators and 6 Student Volunteers from each department can coordinate and track the Hackathon activities.

The number of problem statements can be flexible — the department may choose one, two, or multiple problem statements, depending on the intended objective. Multiple teams can work on the same problem to assess their creativity, innovation and different approaches to solving the same challenge.

26. The Standard Monthly HackVerse Cycle

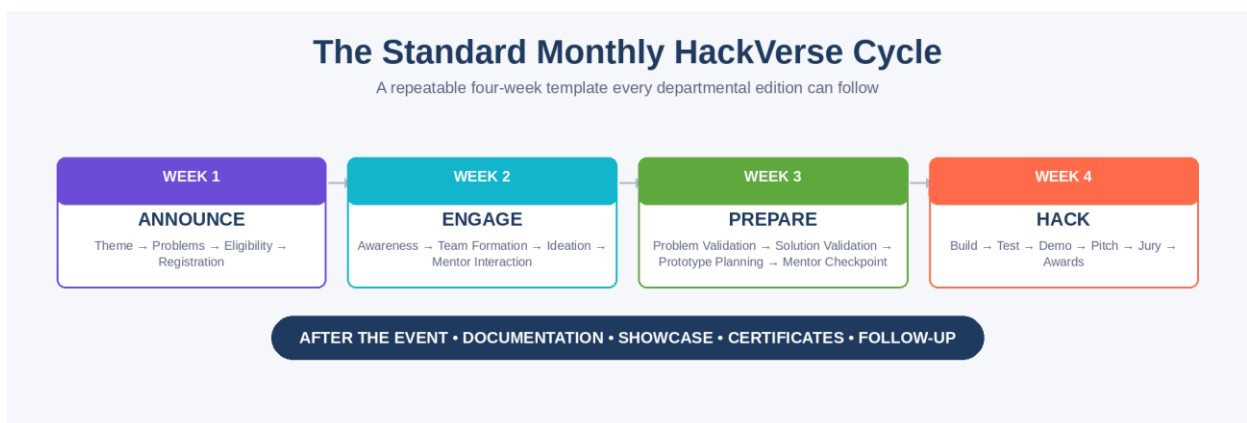


Figure 21. A repeatable four-week cycle every departmental edition can follow.

Week 1 — Announce

Theme • problem statements • eligibility • rules • registration.

Week 2 — Engage

Awareness • idea generation • team formation • workshops • mentoring.

Week 3 — Prepare

Idea validation • prototype preparation • mentor checkpoints • final registration.

Week 4 — Hack

Opening • problem briefing • build • mentor review • prototype • demo • jury • awards.

After the event

Documentation • winner showcase • certificates • media • incubation / research follow-up.

27. The Standard IARE HackVerse Event Flow

Phase	Sequence
Opening	Welcome → HackVerse introduction → theme → problem statements → rules
Innovation Sprint	Team formation → ideation → mentor interaction → development
Review	Prototype check → mentor review → technical validation
Finale	Demo → pitch → jury questions → evaluation
Closing	Winner announcement → awards → certificates → next steps

28. The Organizer's HackVerse Blueprint

Successful hackathons require planning well beyond the event day itself.



Figure 22. A standard organiser pipeline — from purpose all the way to post-hackathon follow-up.

29. Standard HackVerse Roles

Role	Responsibility
HackVerse Patron / Leadership	Provides strategic direction.
HackVerse Core Team	Coordinates the overall series.
Department Coordinator	Leads individual departmental editions.

Role	Responsibility
Faculty Mentors	Provide technical and domain guidance.
Student Ambassadors	Promote participation and support teams.
Industry Mentors	Provide practical and industry perspectives.
Jury Panel	Evaluates final solutions.
Volunteers	Manage logistics and participant support.

30. HackVerse Participant Checklist

Before the hackathon

- ✓ Understand the theme
- ✓ Form your team
- ✓ Select a problem
- ✓ Understand the users
- ✓ Research existing solutions
- ✓ Define your innovation
- ✓ Identify technology requirements
- ✓ Prepare development tools
- ✓ Understand submission requirements

During the hackathon

- Define the MVP
- Divide team responsibilities
- Build quickly
- Test early
- Meet mentors
- Document progress
- Prepare the demo
- Prepare the pitch

Before submission

- ✓ Prototype works
- ✓ Repository updated
- ✓ Presentation ready
- ✓ Demo video ready
- ✓ Impact statement ready
- ✓ AI usage declared
- ✓ IPR declaration completed

31. Organizer Checklist

Before the event

- ✓ Define objective
- ✓ Finalise theme
- ✓ Prepare problem statements
- ✓ Confirm date and venue
- ✓ Create registration form
- ✓ Prepare publicity material
- ✓ Identify mentors
- ✓ Identify jury

- ✓ Prepare evaluation sheet
- ✓ Prepare prizes / certificates
- ✓ Confirm technical infrastructure

During the event

- Registration desk
- Welcome session
- Rules briefing
- Mentor support
- Technical support
- Time announcements
- Prototype review
- Jury coordination
- Photography / documentation
- Winner announcement

After the event

- ✓ Results
- ✓ Certificates
- ✓ Winner showcase
- ✓ Social media
- ✓ Report
- ✓ Prototype repository
- ✓ Follow-up mentoring
- ✓ Research / IPR / startup pathway

APPENDICES

Templates, Forms & Reference

Ready-to-use forms, declarations, formats, glossary, metrics and the HackVerse philosophy

32. Ready-to-Use Annexure Templates

Copy these templates directly into flyers, portals and event kits — no redesign required.

Annexure 1 — Registration Form

IARE HACKVERSE

Participant Name

Roll Number

Department

Year / Semester

Email

Mobile

Skills

Preferred Technology

Team Name

Team Members

Problem Category

Annexure 2 — Team Formation Form

Team Name

Team Lead

Member 1

Member 2

Member 3

Department(s)

Skills

Preferred Theme

33. Idea Submission Form

A single page that captures the whole idea — problem, user, solution, technology and impact.

Project Title

Problem

Target User

Existing Gap

Proposed Solution

Innovation

Technology

Expected Prototype

Expected Impact

Team Details

34. Mentor Review Form

Parameter	Rating
Problem clarity	/10
User understanding	/10
Innovation	/10
Technical feasibility	/10
Prototype progress	/10
Impact potential	/10

Mentor Comments

Strengths

Recommended Improvements

Next Action

35. Final Jury Sheet

Criterion	Marks
Problem Relevance	/10
Innovation	/15
Technical Implementation	/15
Prototype / Functionality	/20
User Experience	/10
Impact	/10
Scalability	/5
Feasibility	/5
Pitch	/10
TOTAL	/100

Jury Comment

"What makes this solution worth taking forward?"

36. AI Usage Declaration

We declare that the use of Generative AI / AI-assisted tools in this project has been disclosed accurately. The team accepts responsibility for understanding, validating and presenting all submitted work.

AI Tool(s)
Purpose
Extent of Usage
Student Validation
Team Lead Signature
Date

37. IPR Declaration

The team declares that:

- The submitted work is original or appropriately attributed.
- Third-party content has been identified.
- Open-source licenses have been respected.
- No confidential data has been improperly used.
- The team understands that public disclosure may affect certain intellectual-property strategies.

38. Code of Conduct

All participants are expected to:

- Respect other participants.
- Maintain professional behaviour.
- Avoid harassment or discrimination.
- Respect intellectual property.
- Protect data and privacy.
- Follow safety requirements.
- Use technology responsibly.
- Follow organizer instructions.
- Report concerns through the designated channel.

39. Final Project Report Format

Fifteen chapters that turn a hackathon prototype into a documented, defensible project.

Chapter	Focus
1 — Introduction	Context and motivation for the project.
2 — Problem Definition	The specific problem being solved.
3 — Existing Solutions	What exists today and where it falls short.
4 — Proposed Solution	The team's approach and value.
5 — System Architecture	High-level design of the solution.
6 — Methodology	How the work was carried out.
7 — Technology Stack	Tools, frameworks and platforms used.
8 — Prototype Development	How the prototype was built.
9 — Testing & Validation	Evidence that it works.
10 — Results	Outcomes and observations.
11 — Impact	Who benefits and how.

Chapter	Focus
12 — Limitations	Honest constraints of the current build.
13 — Future Scope	What comes next.
14 — AI Usage	Disclosure of AI-assisted work.
15 — References	Sources and attributions.

Where applicable, Methodology, Testing & Validation and Results chapters may incorporate Design Basis / Design Considerations, Experimental Setup, Performance Evaluation and Safety Considerations, reflecting the specific engineering discipline of the project.

40. Pitch Deck Format

Twelve slides that carry a judge from problem to impact in five minutes.

Slide	Content
1	Project Title + Team
2	Problem
3	Who Faces the Problem?
4	Existing Gap
5	Our Solution
6	How It Works
7	Solution Architecture / System Design
8	Prototype / Demo
9	Innovation
10	Impact & Scalability
11	Future Roadmap
12	Team + Closing

41. Certificate Content

Certificate of Participation

This is to certify that **[Student Name]**, of **[Department]**, has successfully participated in **IARE HACKVERSE – From Ideas to Impact**, conducted as part of the Institute’s Hackathon Series 2026–27.

Certificate of Achievement

This is to certify that **[Team Name]** has secured **[Prize / Position]** in **IARE HACKVERSE – From Ideas to Impact** for demonstrating outstanding innovation, problem-solving, technical implementation and impact.

42. HackVerse Glossary

Term	Meaning
Hackathon	Time-bound innovation event.
MVP	Minimum / simplest useful working version.
Prototype	Early representation of a solution.
PoC	Proof of Concept.
Pitch	Short presentation of an idea.
Ideation	Generation of solution ideas.
Mentor	Expert providing guidance.
Jury	Evaluation panel.
GenAI	Generative Artificial Intelligence.
LLM	Large Language Model.
RAG	Retrieval-Augmented Generation.
AI Agent	AI system capable of executing tasks / workflows.
IoT	Internet of Things.
UAV	Unmanned Aerial Vehicle.
IPR	Intellectual Property Rights.
Open Source	Software / source shared under license.
Scalability	Ability to expand effectively.
Feasibility	Practical possibility of implementation.
TRL	Technology Readiness Level.
Design Thinking	Human-centred problem-solving approach.
Validation	Evidence that a solution meets its intended requirements.
Digital Twin	Digital representation of a physical system.
Sustainability	Development that meets present needs while reducing environmental and resource impacts.

43. Frequently Asked Questions

Is a hackathon only for programmers?

No. Hackathons can involve designers, civil engineers, mechanical engineers, aerospace engineers, electronics students, researchers, entrepreneurs and domain experts.

Do I need to know AI?

No. AI is one possible technology, not a requirement.

Can I participate without coding?

Yes. Depending on the challenge, teams may need design, domain knowledge, hardware, research, business or communication skills.

Can I use ChatGPT or other AI tools?

Yes — where permitted, with appropriate disclosure and responsible use.

Do I need a complete product?

No. A meaningful prototype or proof of concept can be sufficient.

Can students from different departments form teams?

Yes. Multidisciplinary teams are encouraged wherever they add value.

What makes a winning project?

Usually a combination of **strong problem + innovative solution + working prototype + impact + clear pitch.**

Does winning end the project?

No. The objective is to identify ideas that may continue towards **research → patent → startup → industry → product.**

44. HackVerse Success Metrics

IARE can measure the impact of the entire series across six dimensions.

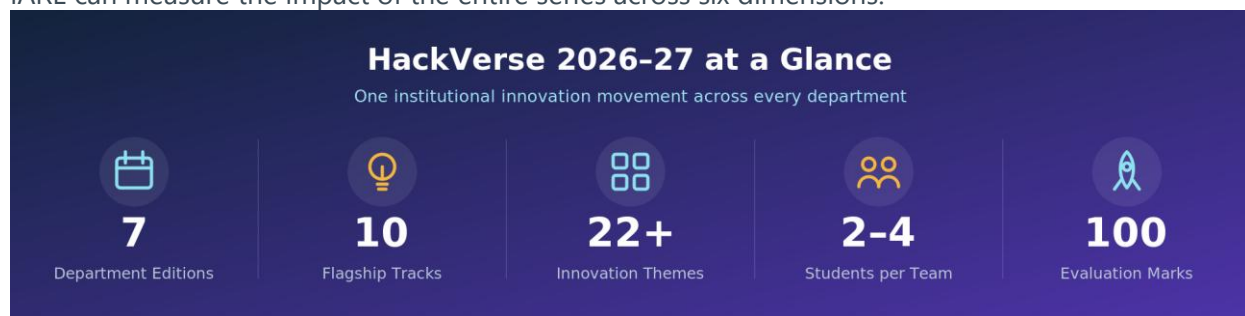


Figure 23. HackVerse 2026–27 at a glance — the headline numbers behind the movement.

Participation

- Number of registrations
- Number of teams
- Number of departments represented
- Number of interdisciplinary teams

Innovation

- Number of ideas
- Number of prototypes
- Number of working demos
- Number of problem statements addressed

Mentoring

- Number of mentors
- Industry participation
- Mentor interactions

Outcomes

- Patents
- Research papers
- Startups
- Industry projects
- Deployments
- Open-source projects

Learning Impact

- Students trained
- Students mentored

- Skills developed
- Prototype completion rate
- Interdisciplinary participation
- Student participation / feedback

Long-Term Impact

REGISTRATION → PARTICIPATION → IDEAS → PROTOTYPES → VALIDATED SOLUTIONS → PATENTS / PAPERS / STARTUPS / INDUSTRY → IMPACT

45. The HackVerse Philosophy

The entire set of guidelines can revolve around **six powerful words**.



Figure 24. Six D's — the rhythm of every HackVerse project, from discovery to delivery.

The Six D's	Meaning
DISCOVER	Find a meaningful problem.
DEFINE	Understand the real challenge.
DESIGN	Imagine a better solution.
DEVELOP	Build the prototype.
DEMONSTRATE	Show that it works.
DELIVER	Take the idea towards real-world impact.

The Six D's represent the overarching HackVerse innovation philosophy, while the Seven-Stage Lifecycle (Discover → Define → Ideate → Build → Test → Pitch → Impact, Section 4) describes the practical journey followed by teams during a hackathon. The two frameworks are complementary, not contradictory.

46. The Final HackVerse Message

START WITH A PROBLEM.
BUILD WITH PURPOSE.
LEARN THROUGH EXPERIMENTATION.
CREATE WITH TECHNOLOGY.
PRESENT WITH CONFIDENCE.
MOVE TOWARDS IMPACT.

47. Reference & Inspiration Sources

The primary external inspiration is HackerEarth's **Complete Guide to Organizing a Successful Hackathon**. Its structure covers hackathon fundamentals, benefits, types, onsite / online / hybrid formats, planning stages, themes, problem statements, judging, prizes, promotion, mentoring and event-day execution.

→ [HackerEarth — The Complete Guide to Organizing a Successful Hackathon](#)

The GE Healthcare example in that guide is particularly useful because it demonstrates the relationship between a **broad theme** → **real-world problem** → **focused sub-themes**, built around digital healthcare and specific challenges such as contextual training, video-content analysis and care protocols.

The official IARE source for the 2026–27 initiative is the **Department-wise Hackathon Calendar 2026–27**, which establishes the department-wise series, scheduled dates, announcement / flyer timeline and collaboration with the TIPS Division.

Recommended Final Identity

The branding is kept **exactly this way** throughout these guidelines, flyers, registration forms, certificates and presentations:

IARE HACKVERSE

From Ideas to Impact

Hackathon Guidelines for Innovation, Problem Solving, Prototyping & Technology-Driven Creativity

IARE HACKVERSE 2026–27 — A Campus-Wide Hackathon & Innovation Journey

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