BaselineSkills

IREB CPRE FOUNDATION LEVEL

CPRE-FL v3 — AUTOMOTIVE EDITION

FROM CPRE KNOWLEDGE TO SAFE, COMPLIANT AUTOMOTIVE SOFTWARE REQUIREMENTS

Learn the standard. Practise the skill. Engineer it right the first time.

The most important single part of building vehicle software is deciding precisely what to build. No other part of the conceptual work is as difficult as establishing the detailed technical requirements, and no other part so cripples the resulting system — or endangers a driver — if done wrong. The inability to produce complete, correct and unambiguous requirements remains the major cause of software failure today, and in a modern, software-defined vehicle that failure does not stay technical. This course gives requirements engineers, systems engineers, software engineers and test engineers working across OEMs and Tier 1 suppliers the practical tools and techniques to deliver high-quality, traceable requirements specifications — and prepares you for the IREB CPRE Foundation Level (CPRE-FL) certification.

"In automotive software, a missed requirement is not a warranty claim. It is a hazard waiting for a safety case to explain it."

Course at a Glance

Course	CPRE Foundation Level (CPRE-FL) v3 — Automotive Edition
Certification	IREB Certified Professional for Requirements Engineering (CPRE-FL)
Duration	4 days
Delivery	Live Online • Classroom • Corporate / On-site
Requirements	Laptop and internet connection • no software installation required
Learning approach	Instructor-led sessions • automotive case studies • ReqDrive labs • exam preparation

Why This Course?

A requirement can look reasonable on paper and still hide ambiguity, an unvalidated assumption, an undefined operational design domain or a silent conflict between an OEM's system requirement and a Tier 1 supplier's implementation. In automotive software, that gap does not surface as a support ticket — it surfaces as a failed ASPICE assessment, a homologation delay, a field campaign or, in the worst case, a road-safety event. This course teaches the IREB CPRE Foundation Level body of knowledge and shows, module by module, how it applies to software that must satisfy ISO 26262, Automotive SPICE and the stakeholders who stand behind those standards.

Three layers of learning

CERTIFICATION	Build your understanding of the IREB CPRE Foundation Level body of knowledge and prepare for the certification examination.
CAPABILITY	Practise elicitation, documentation, analysis, modeling and traceability through automotive OEM / Tier 1 scenarios and exercises.

APPLICATION	Use ReqDrive to apply AI-assisted Requirements Engineering to realistic automotive system and software requirements.

Module 1 — Introduction and Overview of Requirements Engineering

Why requirements errors are the costliest defect in a software-defined vehicle

You will learn

- What, Why, Where and How of Requirements Engineering
- The Role and Tasks of a Requirements Engineer
- The impact of requirement errors on project failure — and on vehicle and road-user safety
- Where Requirements Engineering fits within Automotive SPICE (ASPICE) and the ISO 26262 safety lifecycle

IREB in Practice

Trace a real (or representative) field issue — such as an unintended braking event or a missed activation — back to its root cause and identify whether it was a requirements defect, a design defect or a verification gap.

ReqDrive lab: Use ReqDrive to capture a stated OEM feature request for an ADAS function as a structured business need, and practise separating the underlying vehicle-level need from a proposed solution.

"In a safety-relevant ECU, a requirements defect is not a warranty line item. It is a line in a field problem report."

Module 2 — Fundamental Principles of Requirements Engineering

Nine principles, one functional-safety context

You will learn

- The 9 Principles of Requirements Engineering
- Value-orientation while doing requirements engineering work
- Stakeholder centricity — including Functional Safety, Cybersecurity, Systems Engineering and the Tier 1 supplier
- Shared understanding across OEM, supplier, safety and regulatory teams
- Developing a solid understanding of context, including the Operational Design Domain (ODD)
- The intertwined triple: Problem – Requirements – Solution
- Validation of Requirements
- Requirements evolution is reality — and what that means across vehicle platform variants
- Innovation — more of the same is not enough
- Systematic and disciplined work

IREB in Practice

Map the nine principles against a past program and identify where stakeholder centricity or shared understanding broke down between the OEM and a Tier 1 supplier.

ReqDrive lab: Use ReqDrive to capture stakeholder needs from Systems Engineering, Functional Safety and Cybersecurity for the same feature, and compare how each stakeholder frames the same requirement differently.

"A requirement that satisfies the software team but not the safety case is not yet a requirement — it is a liability."

Module 3 — Practices for Requirements Elaboration

Elicitation, negotiation and validation across OEM and Tier 1 boundaries

You will learn

- Sources for Requirements — HARA and safety goals, field data, regulatory requirements, prior-platform requirements
- The Practice of Elicitation of Requirements
- Requirements Elicitation Techniques
- Requirements Negotiation and Conflict Resolution — across OEM, supplier, safety, cost and schedule priorities
- Validation of Requirements

IREB in Practice

Elicit requirements for an ADAS feature from at least three stakeholder perspectives — functional safety, systems engineering and homologation — and identify where their expectations conflict.

ReqDrive lab: Use ReqDrive to structure elicitation sessions and surface conflicting or missing information before it reaches formal review.

"Safety intent, supplier capability and program schedule rarely arrive from the same meeting — elicitation has to go looking for all three."

Module 4 — Work Products Created in Requirements Engineering

From a Software Requirements Specification to a Safety Case

You will learn

- Characteristics of Work Products
- Level of Detail — appropriate to the ISO 26262 Automotive Safety Integrity Level (ASIL)
- Aspects to be Considered in Work Products
- Documentation Guidelines
- Planning the Work Products to be produced
- Natural-Language-Based Work Products
- Template-Based Work Products
- Model-Based Work Products

IREB in Practice

Review a sample Software Requirements Specification against Automotive SPICE SYS.2 / SWE.1 expectations for its ASIL classification, and identify any gaps.

ReqDrive lab: Use ReqDrive to generate a structured requirements specification from elicited needs, and compare its structure against your organization's SRS template.

"The level of detail in your requirements should match the harm their failure could cause — not the other way around."

Module 5 — Models in Requirements Engineering

Making context, structure, flow and behaviour visible for an ADAS feature

You will learn

- Modeling Context — including the Operational Design Domain and system boundary
- Modeling Structure and Data — including sensor fusion data models
- Modeling Function and Flow — including decision logic flow
- Modeling State and Behaviour — critical for degraded modes, fail-safe and fail-operational states

IREB in Practice

Model the state and behaviour of a safety-critical decision function — such as an automatic braking trigger — and identify every state in which the system must remain safe.

ReqDrive lab: Use ReqDrive to generate a model-based view of a requirement set and check it against the hazard states identified in your HARA.

> ***"If you cannot draw the degraded and fail-safe states, you have not finished specifying the requirement."***

Module 6 — Glossaries, Documentation Structures, Prototypes and Quality Criteria

Precision in language is a safety control, not a style preference

You will learn

- Importance of Glossaries in Requirements Engineering — and alignment across OEM, supplier and regulatory terminology
- Requirements Documentation Structures
- Prototypes in Requirements Engineering, including Software-in-the-Loop (SIL) and Hardware-in-the-Loop (HIL) simulation
- Quality Criteria for Work Products and Requirements

IREB in Practice

Build a glossary entry for a technical term used inconsistently across your organization's systems, software and safety teams — such as 'confidence threshold' or 'minimal risk condition' — and agree a single definition.

ReqDrive lab: Use ReqDrive's quality diagnostics to check a set of requirements for ambiguity, vague terms and untestable language before they reach formal review.

> ***"Ambiguous language in a user manual is a complaint. Ambiguous language in a requirement is a hazard waiting for a root cause."***

Module 7 — Requirements Engineering Process and Working Structure

Configuring RE to fit ASPICE and ISO 26262, not fight them

You will learn

- Influencing Factors while Selecting a Requirements Engineering Process and Working Structure
- Requirements Engineering Process Facets
- Configuring a Requirements Engineering Process — to align with Automotive SPICE (SYS.2, SWE.1) and the ISO 26262 safety lifecycle

IREB in Practice

Map your current requirements engineering process against the Automotive SPICE process reference model and identify where the OEM and Tier 1 processes are duplicated, contradictory or disconnected.

ReqDrive lab: Use ReqDrive to model a requirements workflow that mirrors your program's V-model stages, from system requirements through software requirements.

"A requirements process that ignores ASPICE will eventually be assessed into submission — better to design them together."

Module 8 — Practices for Requirements Management

Traceability is your evidence for an ASPICE assessment and a safety case

You will learn

- Purpose and Tasks of Requirements Management
- Life Cycle Management
- Version Control
- Configurations and Baselines — including variant management across vehicle platforms and trims
- Attributes and Views
- Traceability — from stakeholder requirement through safety goal to verification evidence
- Handling Change — including impact analysis on the safety case and supplier interface
- Prioritization

IREB in Practice

Build a traceability chain from a stakeholder requirement through a system requirement, a safety requirement and a verification test — then introduce a change and trace its full impact.

ReqDrive lab: Use ReqDrive for structured requirements management and traceability, connecting business goal → stakeholder requirement → system requirement → safety requirement → test case.

"When the assessor asks 'show me,' traceability is the only acceptable answer."

Module 9 — Tools in Requirements Engineering

Choosing and introducing tools across a multi-supplier toolchain

You will learn

- Criterion for Selecting a Requirements Engineering Tool
- Introducing Tools — including integration across OEM and Tier 1 toolchains

IREB in Practice

Evaluate a candidate requirements engineering tool against your organization's cross-supplier traceability, variant management and audit-trail requirements before adoption.

ReqDrive lab: Use the full ReqDrive workflow — from business need through requirements, traceability and SRS assembly — and discuss what would be required to integrate it across an OEM / Tier 1 toolchain boundary.

"A tool should strengthen your Requirements Engineering practice — not become a new thing you have to audit."

Requirements Engineering in the Automotive Context

The IREB CPRE Foundation Level body of knowledge is standard-agnostic by design — it is the same discipline whether you build a mobile app or an ECU. What changes in an automotive organization is the context the requirements engineer must work within: the standards that shape what a requirement must demonstrate, and the stakeholders — often spanning an OEM and at least one Tier 1 supplier — who must agree it is correct before it can move forward.

Key Standards for Automotive Requirements Engineers

ISO 26262	Functional safety for road vehicles; ASIL-based safety requirements and safety lifecycle.
Automotive SPICE (ASPICE)	Process reference and assessment model for systems and software engineering.
ISO 21448 (SOTIF)	Safety of the Intended Functionality — addresses performance limitations, not just faults.
ISO/SAE 21434	Cybersecurity engineering for road vehicles.
UNECE WP.29 (R155 / R156)	Cybersecurity and software update management regulations for type approval.
ISO 24089	Software update engineering for road vehicles.
AUTOSAR	Software architecture standard affecting requirement allocation and interfaces.
ISO/PAS 8800	Emerging guidance on safety and AI for road vehicles.

Key Stakeholders You Will Learn to Engage

- Systems Engineering (OEM) — define vehicle-level functions and interfaces.
- Functional Safety Engineering — define ASIL ratings, safety goals and safety requirements.
- Cybersecurity Engineering — define security requirements from a Threat Analysis and Risk Assessment (TARA).
- Software / ECU Engineering (Tier 1 supplier) — implement requirements into embedded software.
- Validation & Verification (SIL / HIL / vehicle test) — confirm requirements are testable and verified.
- Homologation / Type Approval — ensure requirements support regulatory approval (UNECE, NCAP).
- Human Factors / HMI — shape driver-vehicle interaction requirements, such as take-over requests.
- Product / Program Management — balance scope, cost, schedule and platform reuse.
- Manufacturing / Plant Engineering — surface requirements that affect production and calibration.
- Aftersales, Diagnostics and OTA — define diagnostic, update and service requirements.

"A requirements engineer in automotive is not negotiating inside one company. They are negotiating across an OEM, at least one Tier 1 supplier, and a regulator who has never met either of them."

The End-to-End Requirements Engineering Path

01 Capture the vehicle-level business need — Module 1

02 Apply the nine principles and understand stakeholders and context — Module 2

03 Elicit requirements from OEM, supplier and regulatory sources — Module 3

04 Document requirements as a structured work product (SRS) — Module 4

05 Model context, structure, function and behaviour — Module 5

06 Build a shared glossary and apply quality criteria — Module 6

07 Configure a requirements process aligned to ASPICE and ISO 26262 — Module 7

08 Manage traceability from need through safety goal to test evidence — Module 8

09 Select and validate requirements engineering tools across the toolchain — Module 9

"Certification proves you know the body of knowledge. Traceability proves you applied it."

What You Will Be Able to Do

- Understand the impact of requirement errors on project failure — and on vehicle and road-user safety.
- Learn the rationale for Requirements Engineering as a formal and systematic discipline.
- Learn various sources of requirements and techniques to capture the required information.
- Learn how to remove ambiguity in language.
- Understand how to record requirements.
- Examine the quality assurance aspects of the requirements and requirements documentation.
- Learn how to deal with disagreement on requirements and conflict resolution across OEM and supplier teams.
- Learn how to effectively manage the requirements, including traceability to safety goals and verification evidence.

Who Should Attend?

- Requirements Engineers, Systems Engineers, Software Engineers, Test Engineers, Project Managers and Program Managers in automotive software and ECU teams looking to improve their hands-on requirements engineering skills.
- Functional Safety, Cybersecurity and Homologation professionals who work closely with requirements.
- Anyone seeking an in-depth understanding of what constitutes quality requirements in a safety-critical, regulated environment.
- Anyone who wants to earn the fastest-growing CPRE-FL certification from IREB.

The course is also suitable for OEMs and Tier 1 suppliers looking to establish a common requirements engineering language and practice across systems, software, safety and cybersecurity teams.

Prerequisites

There are no prerequisites for this course, but some experience defining requirements — in automotive or another regulated, safety-critical environment — will be useful.

Course Format

Duration	4 days
Delivery	Live Online • Classroom • Corporate / On-site
Learning	Instructor-led sessions • automotive case studies • individual and group exercises • ReqDrive labs • exam preparation

Certification

IREB Certified Professional for Requirements Engineering (CPRE-FL)

The course is designed around the IREB CPRE Foundation Level v3 syllabus and prepares participants for the CPRE Foundation Level certification examination.

TRAINING ≠ CERTIFICATION

Baseline Skills provides the training and examination preparation. IREB certification is awarded following successful completion of the applicable certification examination. Current examination arrangements and applicable fees are communicated with each scheduled session.

Why Learn with Baseline Skills?

- Standards-based learning aligned with the IREB CPRE Foundation Level syllabus.
- Practical exercises built around automotive OEM / Tier 1 requirements scenarios, not theory alone.
- AI-assisted Requirements Engineering practice using ReqDrive.
- Real-world scenarios involving ambiguity, conflicting stakeholders, regulatory constraints and incomplete information.
- Certification preparation combined with workplace application in a regulated, safety-critical environment.
- Learning from practitioners with automotive and requirements engineering industry experience.

"The real value of Requirements Engineering training is not the number of people who complete the course. It is the number of requirements that become clearer, testable and traceable to a safety goal when they return to work."

For Organizations — Build a Common RE Capability for Safety-Critical Software

A corporate Baseline Skills CPRE-FL programme can combine the IREB framework with your organization's own vehicle programs, standards and templates, plus AI-assisted ReqDrive labs and team discussion.

- Common requirements engineering terminology across systems, software, safety, cybersecurity and program teams.
- Common quality criteria and review practices aligned to ISO 26262 and Automotive SPICE.
- Stronger OEM / Tier 1 requirements alignment and review discipline.
- Requirements validation and traceability practices that hold up under an ASPICE assessment or safety audit.
- Change and requirements governance appropriate to a V-model / safety lifecycle environment.
- Experience with AI-assisted Requirements Engineering, applied responsibly across a multi-supplier toolchain.

"Don't just train people to write more requirements. Train them to discover, challenge and validate the right ones — and prove it with traceability and a defensible safety case."

What Comes Next?

CPRE-FL provides a foundation for further specialization in Requirements Elicitation, Requirements Management, Requirements Modeling and RE@Agile, as well as broader Baseline Skills learning paths in Business Analysis, Systems Engineering and automotive-specific topics such as functional safety requirements and SOTIF.

Frequently Asked Questions

Is this only a certification-preparation course?

No. Certification preparation is an important component, but the course also emphasizes practical Requirements Engineering capability through exercises, automotive case studies and ReqDrive-based labs.

Is ReqDrive required to take the course?

No. ReqDrive is used as a practical learning environment during selected exercises. The underlying Requirements Engineering concepts and techniques are taught independently of the tool.

Will AI do the Requirements Engineering for me?

No. The course emphasizes human judgement. ReqDrive provides AI-assisted analysis, suggestions and perspectives that learners are expected to evaluate critically — which matters even more when a requirement feeds into a safety goal or a supplier interface agreement.

Do I need automotive experience to attend?

No. The course teaches the IREB CPRE Foundation Level body of knowledge and illustrates it with automotive scenarios; some experience defining requirements in any environment is useful but not required.

Will I learn how to connect requirements to functional safety (ISO 26262)?

Yes. Traceability from stakeholder requirement through safety goal to verification evidence is covered as part of Requirements Management.

Will I learn how to manage requirement conflicts between an OEM and a Tier 1 supplier?

Yes. Elicitation, negotiation and conflict resolution are covered and reinforced through multi-stakeholder, cross-organization exercises.

Is the certification exam included?

This depends on the selected course session. Please check session details for the applicable training and examination arrangement.

LEARN THE STANDARD • PRACTISE THE SKILL • ENGINEER IT RIGHT THE FIRST TIME

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