

Tier 1 — Core Battery Science / Engineering

Use for LOW-SENSITIVITY prompts (precision-focused)

- Battery chemistry and material science
- Redox reactions in batteries
- Anode/cathode design
- Lithium-ion batteries
- Solid-state batteries
- Electrochemical energy storage
- Battery diagnostics and control
- Battery degradation
- Battery modeling
- SOC/SOH estimation
- Battery lifecycle analysis
- Battery QA/QC protocols
- Cell balancing
- Thermal runaway
- Thermal control in batteries
- Battery simulation tools
- Advanced battery systems
- Embedded systems for batteries
- Battery architecture

- Battery failure analysis
 - Battery pack integration
 - Battery materials
 - Battery charge/discharge cycles
 - Battery safety systems
 - Battery integration and testing
 - Battery manufacturing and QA
 - Battery management systems (BMS)
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Tier 2 — Operational Battery Technology / Design Integration

Use for MEDIUM-SENSITIVITY prompts (balanced TP/FP control)

- Battery diagnostics
 - Battery safety (technical, not basic handling)
 - SOC/SOH measurement
 - Power electronics (battery-inclusive)
 - Battery use cases (if clearly engineering-focused)
 - Circuits using batteries (engineering application context)
 - UPS systems (when framed around battery storage)
 - Battery packs in products (non-EV)
 - Rechargeable device support (tech design focused)
 - Portable battery devices (with circuitry focus)
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Tier 3 — General Battery Awareness / Hybrid Context

Optional for MEDIUM or HIGH-SENSITIVITY prompts (more inclusive, but riskier)

- Portable energy storage
 - Solar + battery install
 - Electrical systems with battery input
 - Battery-powered systems
 - Battery replacement
 - Battery types overview
 - General energy storage reference
 - Power systems (non-battery dominant)
 - Hybrid power topics (non-core battery)
 - Battery handling basics (non-technical)
 - Battery in power labs (non-specialized)
 - Battery safety (general)
 - General electronics (includes battery-powered tools)
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Tier 4 — Non-Specific / Adjacent Energy Topics

Only use in HIGH-SENSITIVITY prompts (max TP, high FP risk)

- Electrical maintenance
- Circuits and instrumentation (broad)
- Basic energy systems
- Battery mention in passing (e.g., syllabi with 1 sentence)

- Any course referencing “energy storage” with unclear battery tie
- Any non-EV power lab with incidental battery reference

STRICT EXCLUSION — Never Use

EV-dominant keywords (these disqualify results):

- Electric vehicles (EVs)
- EV propulsion
- EV charging
- EV infrastructure
- EV diagnostics
- Hybrid electric vehicles
- e-Mobility
- Automotive battery systems
- EV integration
- EV safety
- EV systems engineering
- Smart mobility
- Battery use in EVs
- EV battery packs