**⚙️ BEL 2025 — 8-Day Full-Coverage Study Plan**

**📅 Day 1 — (Oct 17) — Core Foundations: Circuits + Basics**

**Focus:** Build your base in core electronics.

**Study:**

* Electronic Devices & Circuits  
  → Diode, BJT, FET, Rectifiers, Amplifiers, Oscillators.
* Analog Circuits  
  → Op-Amp, Filters, Differential Amplifier, Feedback Concepts.
* Network Analysis  
  → KVL, KCL, Theorems (Thevenin, Norton), Transient and AC Analysis.
* Electrical Technology  
  → Transformers, DC Machines, 3-Phase Systems (overview).

**Aptitude (2 hr):**

* Time & Distance
* Time & Work
* Ratio & Proportion
* Simple Interest / Compound Interest

**English (30 min):**

* Synonyms / Antonyms
* Common Error spotting

**Computer (1 hr):**

* Basics of Computers, IT Tools, MS Office, Hardware components.

**📅 Day 2 — (Oct 18) — Digital + Communication Basics**

**Focus:** Digital core + communication theory.

**Study:**

* Digital Electronics  
  → Logic Gates, K-maps, Flip-Flops, Counters, Multiplexers, ADC/DAC.
* Principles of Communication  
  → Modulation/Demodulation (AM/FM), Noise, SNR, Bandwidth.
* Digital Communication  
  → Sampling, PCM, ASK/FSK/PSK, Error detection.
* Control Engineering (overview)  
  → Transfer function, Stability, Root locus, Bode plot basics.

**Aptitude (2 hr):**

* Percentages
* Profit & Loss
* Averages
* Simplification & Approximation

**English (30 min):**

* Fill in the blanks
* Cloze test

**Computer (1 hr):**

* Programming in C — data types, loops, arrays, pointers.

**📅 Day 3 — (Oct 19) — Signal Systems + Instrumentation**

**Focus:** Signals, systems, and measurement concepts.

**Study:**

* Signals & Systems  
  → Continuous/discrete signals, Convolution, Fourier/Laplace transforms.
* DSP  
  → Sampling theorem, DFT/FFT, FIR/IIR filters.
* Industrial Instrumentation  
  → Sensors, Transducers, Measurement systems.
* Electronic Measurement & Instruments  
  → Accuracy, Errors, Bridges, CRO, Function generator.

**Aptitude (2 hr):**

* Problems on Numbers
* LCM & HCF
* Simplification
* Indices & Surds

**English (30 min):**

* Vocabulary
* Idioms & Phrases

**Computer (1 hr):**

* Data Structures (Array, Stack, Queue, Linked List, Tree basics).

**📅 Day 4 — (Oct 20) — Embedded + VLSI + Microcontrollers**

**Focus:** Hardware design & embedded concepts.

**Study:**

* Microcontrollers & Applications (8051, ARM, Interfacing).
* Embedded System Design (Architecture, RTOS basics, Interfacing).
* VLSI Design (MOSFET, CMOS logic, Layout, Timing).
* Power Electronics (Converters, Inverters, SMPS).

**Aptitude (2 hr):**

* Time & Work
* Pipes & Cisterns
* Boats & Streams
* Probability (basics).

**English (30 min):**

* Active/Passive Voice
* Sentence Rearrangement

**Computer (1 hr):**

* DBMS: ER Diagrams, Keys, Normalization, SQL Basics.

**📅 Day 5 — (Oct 21) — Communication & EM Fields**

**Focus:** Advance communication and electromagnetic concepts.

**Study:**

* Optical Communication (Fiber optics, Link budget, Losses).
* Advanced Antenna Theory (Antenna types, gain, radiation pattern).
* Electromagnetic Fields (Coulomb’s law, Gauss law, Maxwell equations, Wave propagation).
* Network Analysis (AC circuits, Resonance, Filters – quick revision).

**Aptitude (2 hr):**

* Simple/Compound Interest revision
* Ratio & Proportion practice
* Quadratic Equations

**English (30 min):**

* One-word substitution
* Comprehension passage

**Computer (1 hr):**

* OS Basics, UNIX Commands, Process management, Scheduling.

**📅 Day 6 — (Oct 22) — Control + Image + Instrumentation Review**

**Focus:** Remaining ECE and mixed revision.

**Study:**

* Control Engineering (Bode/Nyquist, Stability, Controllers).
* Digital Image Processing (Image enhancement, segmentation, filtering).
* Optical Communication (revision).
* Electronic Measurement quick review.

**Aptitude (2 hr):**

* Mixtures & Allegations
* Partnership
* Areas / Mensuration / Volumes

**English (30 min):**

* Grammar rules (tenses, prepositions, subject-verb agreement).

**Computer (1 hr):**

* System Analysis & Design
* Networking fundamentals (OSI, TCP/IP, IP addressing).

**📅 Day 7 — (Oct 23) — Full-Syllabus Revision + Practice**

**Focus:** Strengthen retention + mock practice.

**Morning (ECE – 6 hr):**

* Revise all **formulas, definitions, and short notes**.
* Focus on **EDC, Analog, Digital, Communication, and Networks** (major weightage).

**Afternoon (Aptitude – 2 hr):**

* Practice one **full aptitude mock test** (speed & accuracy).

**Evening (English + Computer – 2 hr):**

* Revise vocabulary list, idioms, and practice comprehension.
* Review DBMS, OS, and Networking quick notes.

**Night (1 hr):**

* Review difficult questions from previous days.

**📅 Day 8 — (Oct 24) — Final Rapid Revision**

**Focus:** Quick recall + mental readiness.

**Morning:**

* Formula sheets (Analog, Digital, Communication, Control, DSP).
* Important theory tables (Amplifier types, Modulation types, Filters).

**Afternoon:**

* Quick scan of all Aptitude shortcuts.
* 25 quick English MCQs.
* 25 Computer MCQs.

**Evening:**

* Light revision only.
* Sleep early, keep hall ticket and ID ready.

**🧾 Preparation Tips**

1. **Study Pattern (Pomodoro method):**
   * 1 session = 50 min study + 10 min break.
   * 5 such sessions = 4 focused hours.
2. **Material to Use:**
   * **ECE:** Made Easy / GATE notes / handwritten formula books.
   * **Aptitude:** RS Aggarwal / IndiaBix / Pocket Aptitude app.
   * **Computer:** Online MCQs + notes from TutorialsPoint or GeeksforGeeks.
   * **English:** Previous year BEL / ISRO / DRDO English papers.
3. **Mock Practice:**
   * From **Oct 21–24**, take **one full-length test daily** (technical + aptitude).
   * Analyze mistakes immediately.
4. **Formula Sheet:**
   * Make one A4 page per subject with only formulas & key points.
   * Revise it on the last 2 days.

📅 **BEL 2025 — 8-Day Study Plan & Progress Tracker**

| **Day & Date** | **Main Subjects (ECE Core)** | **Aptitude / Reasoning Topics** | **Computer Knowledge** | **English Topics** | **Progress / Notes** |
| --- | --- | --- | --- | --- | --- |
| **Day 1 (Oct 17)** | • Electronic Devices & Circuits • Analog Circuits • Network Analysis • Electrical Technology | • Time & Distance • Time & Work • Ratio & Proportion • Simple/Compound Interest | • Basics of Computers • IT Tools, MS Office | • Synonyms/Antonyms • Error Spotting | ☐ |
| **Day 2 (Oct 18)** | • Digital Electronics • Principles of Communication • Digital Communication • Control Engineering (Basics) | • Percentages • Profit & Loss • Averages • Simplification | • C Programming (Basics, Loops, Arrays) | • Fill in the Blanks • Cloze Passage | ☐ |
| **Day 3 (Oct 19)** | • Signals & Systems • DSP • Industrial Instrumentation • Electronic Measurements & Instruments | • Problems on Numbers • LCM & HCF • Indices & Surds | • Data Structures (C++, Arrays, Stacks, Queues) | • Vocabulary • Idioms & Phrases | ☐ |
| **Day 4 (Oct 20)** | • Microcontrollers & Applications • Embedded System Design • VLSI Design • Power Electronics | • Pipes & Cisterns • Boats & Streams • Probability | • DBMS (ER, Keys, SQL Basics) | • Active/Passive Voice • Sentence Rearrangement | ☐ |
| **Day 5 (Oct 21)** | • Optical Communication • Antenna Theory • Electromagnetic Fields • Network Analysis (Revision) | • Quadratic Eqns • Ratio & Prop (Rev.) • Simple Interest (Rev.) | • Operating Systems Basics • UNIX & Shell Programming | • One-word Substitution • Comprehension | ☐ |
| **Day 6 (Oct 22)** | • Control Engineering (Detail) • Digital Image Processing • Instrumentation Revision | • Mixtures & Alligations • Partnership • Mensuration/Volumes | • Systems Analysis & Design • Computer Networks (OSI, TCP/IP) | • Grammar Rules (Prepositions, Tenses) | ☐ |
| **Day 7 (Oct 23)** | • Full ECE Revision (EDC, Analog, Digital, Comm., Control) • Formula Sheets | • Full Aptitude Mock Test #1 | • Quick Review (DBMS, OS, Networks) | • Vocabulary & Reading Practice | ☐ |
| **Day 8 (Oct 24)** | • Final Formula Revision • Quick Concept Recall (1 hr each subject) | • Shortcut Formula Review • Mixed MCQs | • 25 Quick Computer MCQs | • 25 Quick English MCQs • Light Revision | ☐ |

⏰ **Suggested Daily Schedule**

| **Time** | **Task** |
| --- | --- |
| **8 AM – 10 AM** | ECE Subject 1 |
| **10:15 AM – 12:15 PM** | ECE Subject 2 |
| **12:15 PM – 1 PM** | Break / Lunch |
| **1 PM – 3 PM** | Aptitude / Reasoning |
| **3:15 PM – 4:30 PM** | Computer Knowledge |
| **4:45 PM – 6 PM** | English |
| **6 PM – 7 PM** | Rest / Exercise |
| **7 PM – 9 PM** | ECE Revision / MCQ Practice |
| **9 PM – 9:30 PM** | Short Review + Notes Update |

✅ **Tracking Legend**

| **Symbol** | **Meaning** |
| --- | --- |
| ☐ | Not Started |
| ▣ | In Progress |
| ✅ | Completed |
| ★ | Needs Revision |
| ⚡ | Weak Area — revisit later |